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THE

DENTAL NEWS LETTER:

A QUARTERLY PUBLICATION,

DEVOTED TO THE

INTERESTS OF THE DENTAL PROFESSION.

EDITED BY

J. D. WHITE, M. D., D. D. S., AND J. R. McCURDY, D. D. S.

VOLUME XI.

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THE DENTAL NEWS LETTER.

VOL. XI.

PHILADELPHIA, OCTOBER, 1857.

No. 1.

AMERICAN DENTAL CONVENTION.

[Reported Expressly for the DENTAL NEWS LETTER, by J. M. W. Yerrinton.]

The Third Annual Session of the American Dental Convention was held at the Meionaon, in the City of Boston, on Tuesday, Wednesday, Thursday, and Friday, August 4th, 5th, 6th, and 7th, 1857; commencing on Tuesday, the 4th, at 12 M.

The following is a list of the members:—

Maine.—A. K. Gilmore, G. W. Reed, and B. T. Cowin, Bath; S. B. Straw, Bangor; J. S. Chase, Hallowell; J. B. Fillebrown, Winthrop; W. Randall, Farmington; C. H. Burr, Portland; J. Mason, Saco; T. J. W. Trussell, Rockland; G. F. Waters, Waterville.

New Hampshire.—J. Smith and A. J. Young, Dover; J. A. Chamberlain and Joseph Austin, Manchester; J. W. Little, Concord; W. Ball, Walpole; J. W. Russell, Winchester; Frank Fuller, E. S. Ryder, and S. Baker, Portsmouth; A. Severance, Great Falls; M. M. Smith, Claremont; E. G. Cummings, Lancaster; A. M. Moore, Lebanon; D. K. Boutelle, Peterboro'; J. A. Reed, Newport; — Locke, Nashua; S. W. Hale, Oxford; P. A. Stackpole, Dover.

Massachusetts.—E. G. Tucker, J. A. Cummings, J. Shepherd, E. T. Wilson, A. Ball, N. C. Keep, G. O. Stearns, H. B. Hale, S. P. Bartlett, E. Blake, J. M. Thresher, N. K. Mayo, J. Ayling, O. P. McAlaster, J. Clough, J. A. Salmon, S. Simonds, H. P. Hemmingway, J. J. Wetherbee, Boston; W. S. Phipps, Marlboro'; F. Field, Waltham; S. G. Henry, Westboro'; George O. Fairbanks, Fall River, W. H. Noyes, Gloucester; A. A. Cook, Milford; W. H. Jones, Wooster; C. E. Thompson, Groton; J. Farnum, Salem; E. Sanborn, Andover; C. Washburn, Bridgewater; Thomas Palmer and C. H. Whitney, Fitchburg; H. N. Macomber, Lynn; H. Collins, Salisbury; J. H. Batchelder and W. L. Boudoine, Salem; George N. Whitney, L. W. Puffer and E. M. Atkinson, North Bridgewater; C. F. Hein, Waterton; S. P. Miller, H. F. Bishop, O. F. Harris and J. Childs, Worcester; J. H. Kidder, Lawrence; F. Searle, M. E. Ames and C. S. Hurlburt, Springfield; D. B. Ingruls, Clinton; C. S. Hicks and C. G. Davis, New Bedford; J. McGregory, Sturbridge; J. Beales,

Greenfield; J. Thompson, Sandwich; W. Cutler and D. P. Wilson, South Boston; D. S. Bartlett, Roxbury; E. E. Streeter, North Adams; Wilkes Allen and D. S. Dickerman, Taunton; J. T. Folsom, Gloucester; N. C. Fowler, Yarmouth; A. Lawrence, Lowell.

Vermont.—O. K. Post, Brattleboro'; E. N. Harwood, Rutland; M. Newton, Montpelier; M. Tefft, West Poultney.

Connecticut.—D. H. Porter, Bridgeport; L. Betts and L. Potter, New London; W. Potter, Norwich; R. G. Reynolds, Waterbury; E. E. Crowfoot, Hartford.

Rhode Island.—A. C. Hawes, W. N. Martin, L. N. Seeberry; R. P. Berry, Newport; John A. Robertson, Warren; H. H. Farnham, Westerley.

New York.—A. McIlroy, W. B. Roberts, W. Dalrymple, John Allen, W. H. Dwinelle, B. Lord, George Clay, S. H. Clark, E. A. L. Roberts, G. H. Perine, George S. Hawes, D. J. S. Dodge, Jr., E. J. Dunning, C. S. Miles, W. H. Allen, J. M. Crowell, New York City; A. Blakesly, A. N. Priest, H. S. Nichols and L. W. Rogers, Utica; J. E. Ostrander, Oneida; U. Bachelor and J. A. Perkins, Rome; A. Blake, Sardinia; E. Ware Sylvester, Lyons; S. B. Palmer, Tully; S. W. Sutton, Green Point, L. I.; W. A. Palmer, Poughkeepsie; C. D. Hayward, Brooklyn; H. C. Grant, Lima; E. D. Fuller, Peekskill; D. S. Goldey, Oswego.

New Jersey.—A. W. Kingsley and S. E. Armes, Elizabeth; J. C. Robins, Jersey City; W. W. Ward and A. A. Cleveland, Newark.

Pennsylvania.—Elisha Townsend, T. L. Buckingham, A. M. Asay, J. R. McCurdy, C. A. Du Bouchet, C. S. Orum, Philadelphia; W. A. Chittenden, Scranton; T. J. Chandler, Rochester; John Waylan and S. Welchens, Lancaster.

Delaware.—H. Garrett, Wilmington.

Maryland.—C. A. Harris, W. H. Stinson, A. A. Blandy, J. Wheelwright, Baltimore; H. H. Harvey, Hagerstown; G. S. Fouke and R. R. Booth, Westminster.

Virginia.—J. G. Coates, Big Lick; James Johnson, Staunton.

South Carolina.—S. Blanding, Columbia.

Georgia.—A. W. Allen.

Missouri.—J. Forbes, C. W. Spaulding, A. M. Leslie, St. Louis.

Mississippi.—H. C. Kendrick, Natchez.

Louisiana.—A. F. McLain, Franklin.

Tennessee.—T. B. Hamlin, Nashville.

Kentucky.—D. W. Roundlebusch, Covington.

Illinois.—W. W. Allport, Chicago; I. B. Branch, Galena.

Michigan.—O. M. Carlton, Ypsilanti.

Wisconsin.—D. W. Perkins, Milwaukee.

Ohio.—James Taylor, J. Taft, Charles Bonsall, W. Storer How, Cincinnati; C. R. Taft, Mansfield; A. E. Lyman, Newton Falls.

W. D. and A. Brown, (no residence given.) Also, a gentleman from "Lewiston Falls," another from "Wellfleet, Mass.," and another of "Boston," whose names we cannot decypher.

[We trust, that in future, the names and residences of those attending the Convention may be taken with more care, so that a full and legible list may be made up without difficulty or mistake. In this case, but for *our* list of the names of the dentists in the country, and a copy of a Post Office Directory, we should have given up all idea of anything like a correct list. As it is, there are doubtless many errors, but for such our excuse is abundantly ample.]—ED. DENTAL NEWS LETTER.

Prof. CHAPIN A. HARRIS, of Baltimore, called the Convention to order.

The Secretary, Dr. ELISHA TOWNSEND, of Philadelphia, read the names of the Business Committee, by which it appeared that the chairman, and some of the other members, were absent.

Prof. Harris stated that he had received a letter from the chairman, (Dr. J. S. Clark, of New Orleans,) stating that he should not be able to be present, and the letter was read.

Dr. W. W. Allport, of Chicago, inquired if it would be expected that the committee should make a report upon the order of business.

The President stated that inasmuch as the members of the committee had probably reflected somewhat upon the business proper to be presented, he thought they would be better qualified to attend to the matter than a committee newly appointed.

The roll of the committee was then called, and it being ascertained that a majority of the committee were present, the President stated that, according to the usual course of proceeding, Dr. H. C. Kendrick, of Mississippi, would act as chairman.

Dr. Kendrick excused himself, and the subject of the appointment of a chairman was left to the committee itself.

The Minutes of the last session of the Convention were then read by the Secretary.

An inquiry was made of the Secretary, if the records did not attribute the invention of an instrument, to which reference was made, for producing local anæsthesia, to Dr. Putnam, of New York, instead of Dr. Branch, of Illinois, to whom it properly belonged.

While the Secretary was examining his minutes, the President said that he believed he could answer the question. When he introduced the matter to the Convention, he supposed the instrument was the invention of Dr. Putnam, and that he claimed it; but he had since ascertained that Dr. Branch was the inventor.

Dr. Wm. H. Dwinelle, of New York City, said this matter had become a part of history. Dr. Branch was the inventor, and had secured letters patent, and nobody else had any claim to the invention.

The Secretary then stated that the minutes did not give the name of Dr. Putnam as the inventor.

The President said that while the Business Committee were engaged, he would embrace the opportunity to state to the Convention that he had received a letter from Dr. J. M. Weiber, of Paris, offering a new preparation of gold for filling teeth, which the writer believed preferable, on many accounts, to any other preparation heretofore used by the dental profession.

The letter was then read by the Secretary.

The President said it would be proper to state, that the box containing the gold and the tooth referred to in the letter, was opened at the Custom House, and the tooth lost—it never reached him.

Dr. Charles Bonsall, of Cincinnati, moved the acceptance of the letter.

The President suggested its reference to a committee, with the gold accompanying it, that the latter might be fairly and thoroughly tested.

Dr. Isaiah Forbes, of St. Louis, moved that it be referred to the officers of the Convention.

Dr. Townsend said this motion would meet his views much better than the appointment of a committee. The organization of the Convention was decidedly a democratic one, and he feared, if they began by appointing a committee in this case, which would seem to warrant it, they would get themselves into a kind of trouble and take upon themselves responsibilities which they ought to escape, and which they did not wish to assume, and of which undue advantage would be taken by those who were always ready to hang to the back of anything they thought strong enough to carry them. They found last year, that gentlemen came to the Convention, got what knowledge they could, and then went home and made a card of it, publishing themselves as having been to the great National Convention, and saying they had learned wonderful things, which would be put to the advantage of their patients, and put into their own pockets afterward. He did not

think the Convention was established for any such purpose. They wanted to obtain and give all the information they could, but they did not want to commit themselves, by the appointment of a committee, to the condemnation or approval of anything. The mere fact of the appointment of a committee would be enough, in some cases, to afford an opportunity for parties to go home and claim credit for themselves, on the ground that the Convention had considered their inventions of sufficient importance to appoint a committee to investigate them. He wished to avoid all such difficulties.

Dr. Dwinelle said they must be careful to avoid either extreme. He did not see how it was possible for a body like that to carry out its purposes without some machinery. It would be remembered he had previously deprecated encumbering the operations of the society with very much machinery; he wished to avoid that extreme, but still, he did not see how they could get along without committees. It was assuming that there was no necessity for system. There must be collateral matters going on at the same time with the business of the Convention, and he therefore favored the appointment of the committee.

Dr. Forbes said the letter was one written to the President of the Convention, in as respectful a manner as any letter could have been written, and it appeared on its face, that Dr. Weiber had an invention which he considered would be of advantage to the whole profession. The President had thought well enough of it to have it read to them, and he thought the greatest respect they could pay to the writer, as a scientific man, was to refer it to the officers of the Convention, as their most distinguished members.

Dr. Frank Fuller, of Portsmouth, N. H., suggested that a committee be appointed, to whom all matters of a similar character should be referred. He said that in this progressive age, they would be likely to have many such things presented for their attention, and he thought the appointment of such a committee would be a great saving of time.

Dr. G. O. Stearns, of Boston, expressed the opinion that the meeting was a Convention of the Dental Profession, not a Mutual Admiration Society. He hoped every thing would be done in an open, democratic manner.

Dr. Forbes said, his only object in making the motion was to get the subject out of the Convention at that time, in order that they might go on with their business.

Dr. Branch said he would second the motion. He thought the Convention would be safe in the hands of its officers.

Dr. John Allen, of New York, said he thought they were likely to get into difficulty. If this matter was referred to the officers, it virtually appointed them a committee. This was an important question, because it would establish a precedent on which they were to act hereafter. He thought it was not the object of the Convention to press any opinion upon such matters—to build up A, B, or C, or put him down at pleasure. If he understood the object of the Convention, it was to bring the whole into the great reservoir of useful knowledge. He thought a resolution ought to pass, to the effect, that they would not endorse any improvement brought before them; but that they would examine it, each man looking upon it with reference to its merit or demerit, but not that they were to endorse or reject it as a body.

Dr. W. W. Allport, of Chicago, called to order. He said the whole discussion was out of the prescribed order of business, and he would move to lay the whole subject on the table. The motion prevailed.

Prof. James Taylor, of Cincinnati, from the committee on that subject, reported the following as the order of business for the Convention:—

1st. President's Address; 2d. Election of Officers; 3d. Debate—"What are the best means for securing a healthy denture;" 4th. Debate—"What are the mechanical appliances necessary to secure the same;" 5th. Debate—On the "best manner of treating Alveola Abscess;" 6th. Discussion on Mechanical Dentistry; 7th. Discussion on Filling Teeth. Speeches to be limited to ten minutes, unless otherwise ordered.

The committee also offered the following resolution:—

Resolved, That all persons having mechanical means or appliances to present to the Convention, be requested not to bring them into the Convention, but deposit them in a separate room, for examination.

The report was accepted and adopted.

The President said—Gentlemen, the first business in order, according to the report of your committee, is an address from the President; but I have to throw myself upon your kind indulgence, as I have often before been compelled to do. I have no address to make. I would have prepared one, but the larger part of the time since the last meeting, my health has been such as to prevent me from writing, and it is only during the last six or eight weeks that I have been able to use my pen, and this I was prevented from doing by professional duties which had been before

neglected. But I will take occasion, while up, to express the great gratification which it affords me in again having the opportunity of meeting with so large a number of my professional brethren. I am glad to see them here; I am glad that they feel so lively an interest in the advancement of dental science, as to put themselves to the trouble and subject themselves to the expense of coming from far distant and widely separated portions of the country, with the view of receiving information from their professional brethren, and interchanging views with each other upon professional subjects; and I am sure that every one will be amply compensated for this trouble and this expense in the accumulation of knowledge, for he will return from here with his hands and heart strengthened, to enter with renewed energy upon the arduous duties of his profession, and be better able to meet the wants of those who seek his aid. I have always been an advocate of dental associations. It has been said of dentists—and perhaps truly—that there was a feeling of rivalry existing among dentists which has heretofore prevented them from acting together, from associating with each other, from interchanging views, and this, no doubt, has retarded the progress of practical and scientific dentistry; but I believe that the time has well nigh arrived, when this feeling will be discountenanced and cease to exist; and I trust that harmony of feeling and brotherly love will characterize all the proceedings of this Convention, and that we may return to our several homes, having a higher opinion of each other than we have ever had before.

But I will not detain the Convention with any further desultory remarks of this kind.

[A gentleman in the hall made an inquiry with regard to the qualifications requisite to become a member of the Convention. He did not know whether he could consider himself as such or not.]

Dr. Allport said, that in sending out the circulars, he had assumed a little prerogative. He meant by “practising dentists,” to convey to those who received the circular, the idea that any one could become a member of the Convention who wished. He did not mean that every one could vote without complying with the requirements of the Constitution. It seemed to him proper that every member should sign the Constitution, and pay his proportion of the expenses.

Prof. Taylor, of Cincinnati, said that at their last meeting, this subject was thoroughly discussed, and he thought they did their best to make every dentist in the United States, Europe, Africa and Asia, understand that he was a member as soon as he came here; and that

fact they published to the world. So far as signing the Constitution was concerned, he thought that was done simply to get the names of those present, and no man was compelled to pay one dime towards the expenses. They took it for granted, and he hoped they always would, that that body of dentists was ready and willing to meet all the expenses that might be incurred. (Applause.)

Dr. Townsend said, he perceived they wanted an open Convention—more open than it was. He would therefore move that they do away with the Constitution altogether, and invite every dentist, every where, to become a member.

Dr. Dwinelle seconded the motion, and hoped that it would include not only practising dentists, but all who had ever been practising dentists. If their excellent President should leave the profession tomorrow, he could not be a member of the Convention. Though a *practical*, he could not be considered a *practising* dentist.

Dr. Townsend said, he should like to see gentlemen connected with other scientific professions in the Convention. He had learned a great deal in reference to his own profession, from men who knew nothing at all about it. (Applause.) They had given him the results of their investigations, and he made an application of them which they did not dream of.

Dr. Spaulding, of St. Louis, said the suggestion met his hearty approval. He was glad that it had been offered, for it seemed to him difficult to fix the qualifications that should render a man a member of the Convention. He thought they should place it on the broad ground that any man who professed to be a dentist should be entitled to membership.

Dr. J. A. Perkins, of Rome, N. Y., stated that he had been a practising dentist, but was not now, and inquired if he could vote. The President replied that he could.

Dr. Townsend's motion was adopted, and Dr. T. then said, that this was what he aimed at two years ago, but to speak the whole truth about it, he was afraid to undertake to start the movement, without something that looked like a piece of red tape to tie up the members. He was afraid he could not get men to come to that platform without it; but he wrote the Constitution, so that it was bind and loose, bind and loose all the way through. It seemed, however, that it bound enough to make some cavil, and therefore he voted to throw it away.

The Convention then proceeded to the second item in the order of business, namely, "The Election of Officers."

Dr. F. H. Clarke, of New York city, moved that the Convention

proceed to ballot for President, the three gentlemen receiving the highest number of votes on the first ballot, to be considered the candidates, the lowest on the second ballot to be dropped, leaving only two names for the final ballot. The motion was adopted.

Drs. Allport and Roberts, were appointed tellers.

After the first ballot, Prof. Taylor, of Cincinnati, Drs. Allport, of Chicago, Forbes, of St. Louis, and Townsend, of Philadelphia, were declared the candidates, the two former and the two latter having received tie votes.

Dr. Townsend stated that he should decline being considered as a candidate, as he should not be able to attend the next Convention, as he expected to be in Europe at that time.

On the second ballot, Prof. Taylor had 52 votes; Dr. Allport, 26; Dr. Townsend, 15; Dr. Forbes, 4.

On motion of Dr. Dwinelle, the election of Prof. JAMES TAYLOR, of Cincinnati, as President of the Convention, was made unanimous.

Dr. Bonsall, of Cincinnati, suggested that as they had taken a western man for President, they take an eastern man for Vice President.

Dr. Fuller, of Portsmouth, N. H., said it seemed to him highly proper and courteous that the two extremes of the country should be represented in the two highest officers of the Convention, and he would therefore nominate as a candidate for Vice President, Dr. Straw, of Bangor. He was one of the oldest members present.

On the first ballot, Dr. E. G. Tucker, of Boston, received 42 votes; Dr. John Allen, of New York City, 29; and Dr. Straw, of Bangor, 18, and the two former gentlemen were declared the candidates.

While the committee were collecting the votes on the second ballot, Dr. Rogers, of Utica, N. Y., moved that when the Convention adjourn, it be to meet at four o'clock in the afternoon. Adopted.

On the final vote for Vice President, Dr. Tucker received 52 votes, and Dr. Allen, 34, and Dr. Tucker was declared elected.

On motion of Dr. Dwinelle, the election was made unanimous.

AFTERNOON SESSION.

The Convention was called to order at 4 o'clock, by the President.

The election of officers was proceeded with, Dr. J. R. McCurdy, being appointed on the committee, to collect and count votes, in place of Dr. Allport, resigned.

On the third ballot for Recording Secretary and Treasurer, Dr. L. W. Rogers, of Utica, N. Y., received 38 votes; Dr. Spaulding, of St.

Louis, 31; and Dr. Rogers was declared elected, and the election made unanimous.

The Convention then proceeded to ballot for Corresponding Secretary, and on the third ballot, Dr. Isaiah Forbes, of St. Louis, was declared elected, he having received 47 votes, to 33 for Dr. Johnson, of Virginia.

Drs. Allport and Perine, were appointed by the President to conduct Prof. Taylor, President elect, to the chair.

Prof. Harris, on leaving the chair, said—I have to convey to the Convention my hearty thanks for their indulgence; and I am gratified that the Convention has made selection, for its presiding officer, of a gentleman with whom I have been acquainted for many years—from the very commencement of his professional career. Indeed, we started out from the same school; we had the same teacher; and although we have been somewhat widely separated from each other in the exercise of our professional duties, I believe we have always worked harmoniously together. (Applause.)

Dr. Allport then said, that in behalf of the President, and as a Western man, it gave him exceeding pleasure to introduce to the Convention the President, Prof. Taylor, of Cincinnati.

The President, on taking the chair, spoke as follows:

“Allow me, gentlemen, first to reciprocate the very kind feeling expressed by the gentleman who has just left the chair. He has alluded to the past—to a period of life when we were young in our profession, when, I was about to say, we scarcely had a profession. He has brought to mind those feelings and memories, which, in addition to the kindness you have this day manifested towards me, have indeed done more to throw me completely beyond the power of speech, than anything which he could have done. (Applause.) There are feelings striving for utterance, which language fails to embody in words; there are emotions gushing up from the deep fountains of my heart, which rush out with such force that I cannot form them into proper words for this occasion.

“We have met, gentlemen, for one very important purpose; may I not say for two very important purposes? First, we have met for the advancement of dental science. We have met to investigate every truth on which that science is founded. We have met to see if those rocks of truth on which the foundation of our temple is now being erected are firmly cemented together. We have met, gentlemen, to compare notes; we have met to exchange ideas with each other, and to refute or confirm opinions previously entertained. We have also met,

may I not trust, to impart to those assembled with us here useful knowledge; and may I not express the hope that every member of this Convention will be ready to impart all the information in his possession, that we may all be benefitted thereby.

“We have met also for one other important purpose. We have met to renew old acquaintances; to draw more closely those bonds which bind us to each other, and the profession we esteem. We have met to interchange not only our views but our sympathies; and we have met also to gaze for the first time upon the faces of those whose works and writings have been speaking to us for years, but who now, for the first time, are brought within our cordial embrace. Who would not be here? Who would not lay aside the labor and toil of his profession to come to this eastern temple to usher in, as it were, a new science—the last mark of man’s progress in dental and scientific knowledge? Who would not participate in such a noble work? Gentlemen, by your kind action in selecting me as your presiding officer, you have conferred upon me an honor that I know I cannot merit, and I feel utterly inadequate at this time to the task imposed upon me; and did I not know that you are all animated by a thirst for knowledge which will lead you to set aside the formalities of parliamentary proceedings, I should shrink from the chair I now assume. I shall, therefore, ask your kind indulgence and hearty co-operation, in order that our deliberations may be such, that this new science, if I may so call it, may continue to advance from one step to another until it ranks with that ancient and time-honored profession which we all revere and respect.” (Applause.)

Dr. Perine then offered the following resolution, which was adopted, the Convention unanimously rising:

Resolved, That the thanks of this Convention be tendered to Prof. Harris for the very impartial manner in which he has presided over its deliberations.

A vote of thanks was also passed, on motion of Dr. Allen, of New York, to the other retiring officers, for the faithful manner in which they had discharged their duties.

Prof. Harris then moved the appointment of a committee of five, to examine the gold sent to him by Dr. Weiber, of Paris, the letter accompanying which was read in the morning. He said it was possible the gold might possess valuable qualities, if so, the profession should know it, and make a suitable acknowledgment of its receipt.

Dr. Spaulding suggested that the committee be made a standing committee, to whom should be referred all similar matters during the session.

Prof. Harris said he should have no objection.

Dr. Townsend expressed the opinion that this should be a special committee. It had come to them in a little different manner from anything else they were likely to have, and he hoped it would be referred to a special committee.

The committee was then ordered to consist of five, which the chair appointed, as follows: Drs. Dwinelle, of New York; Allport, of Chicago; Townsend, of Philadelphia; Taft, of Cincinnati; Tucker, of Boston.

On motion of Dr. Lord, of New York, the committee were requested to report during this session of the Convention.

Dr. Fuller, of Portsmouth, N. H., offered the following resolution:

Resolved, That all members of the medical profession, chemists and metallurgists be, and the same hereby are, cordially invited to attend the meetings, and take part, if they please, in the deliberations of this Convention.

This resolution called forth some little debate, and was finally amended by striking out all after the word "meetings," in which shape it was adopted.

Dr. Bonsall, of Cincinnati, moved that the Convention adjourn to meet to-morrow morning at 10 o'clock.

A motion to substitute 9 for 10 o'clock was adopted, and the Convention adjourned.

SECOND DAY.—FORENOON SESSION.

The Convention was called to order, on Wednesday morning, at twenty minutes past 9 o'clock.

A brief discussion took place on the subject of finances, which terminated by the appointment of Drs. Allport, of Chicago, and Miller, of Worcester, a committee to take the names of members and collect funds.

The Convention then took up the first question for debate:

"What are the best means for securing a healthy denture?"

Some hesitation being manifested in opening the debate, the President called on Prof. Harris to present his views to the Convention; but that gentleman declined, stating, however, that at a later stage of the debate, he might have something to say.

Dr. Baker, of New Hampshire, read a communication published by him in the Portsmouth (N. H.) *Journal*, on the effects of saleratus, cream of tartar, and carbonate of soda, on the teeth. He regarded the use of alkalies in the making of bread as highly injurious, and

looked upon them as a principal cause, (though not as the only cause,) of diseased teeth. In answer to an inquiry, Dr. Baker said he thought these substances affected the enamel of the teeth, but not so much as the softer bone.

Dr. Spaulding, of St. Louis, confessed that the assertion that alkalies were injurious to the teeth was a new idea to him; and, in connection with this matter the question arose—Is saleratus a pure alkali? It was well known that saleratus was carbonate of potash, that carbonic acid gas enters largely into its composition. The question was, then, is its action purely that of an alkali? In laying down principles, they must be sure they were strictly correct.

Dr. Kendrick, of Mississippi, inquired through what medium the alkali affected the teeth.

Dr. Baker—Through the medium of the food with which it was mixed.

Dr. Kendrick—Why don't it affect all teeth alike?

Dr. Baker—Some eat more than others.

Dr. Kendrick said that was true. He regarded this subject as a most important one, because it aimed at preventing the trouble they were all united in trying to correct. They were often pained by having children brought to them of eight or ten years old, to have permanent molars taken out, whose parents were perfectly thunder-struck when told that they were the permanent teeth; they had supposed they were the temporary organs, and had been careless of them. He thought the cause of decay was the accumulation of extraneous matter about the teeth, whether of animal or vegetable food; and if he were to answer in a single word the question, "What are the best means of securing a healthy denture," he would say—CLEANLINESS. (Applause.)

Dr. Perine said this was a very important subject, and he was glad it had been brought before the Convention. He had come there, with other younger members of the profession, to learn, and he would be glad to hear from Prof. Harris on this subject.

Prof. Harris said, if he had consulted his own feelings, he would have preferred to remain a listener; but, at the request of several of his professional brethren, he rose to say a few words upon the subject. He could very well conceive that bread, having in its composition saleratus and cream of tartar, if it affected the general health, might indirectly affect the teeth prejudicially; but that they had any direct action upon them, he could not for a moment conceive; for the reason that the alkaline properties of the saleratus were neutralized by the

cream of tartar. That caries of the teeth is the result of the direct action of alkalies, is refuted by the fact that the animal frame-work remains, and even with exalted sensibility, long after the destruction of the earthy salts of the affected parts. But so far as particular kinds of diet and modes of living were capable of affecting the general health, so far the liability of the teeth to decay might be increased. He was of opinion that if every individual came up to a perfect standard of health, caries of the teeth would very rarely, if ever, occur, for the reason that they would be capable of resisting the action of those chemical agents, to the presence of which caries of the teeth was now universally admitted to be attributable, more especially if the ordinary means of cleanliness were resorted to. He agreed with his friend, Dr. Kendrick, that cleanliness was the all-important thing for the preservation of the teeth; but some teeth were so susceptible to the action of chemical agents, so imperfect in their physical condition, that they were very easily assailed. For instance, teeth that were of a very soft texture, they found deep indentations in the grinding surfaces, sometimes absolute imperfections of the enamel, through which the chemical agents of the mouth, whether existing in the fluids of this cavity, or the result of some change which takes place in the remains of alimentary substances lodged in these indentations or between the teeth, are introduced. Teeth of this description decay easily and rapidly. Again, they oftentimes meet with instances of caries, or érosion, if they pleased to call it such, immediately after the eruption of the teeth from the gums, showing that it was to the action of the fluid contained in the sacks of the teeth, and that, too, after they had become completely enamelled, that decomposition was attributable. An example of this kind occurred to him now, which ran through a whole family in Baltimore, and seemed to be dependent upon some peculiar constitutional idiosyncrasy. In almost every member of that family, the teeth, the molars particularly, were found to be more or less eroded immediately on their eruption from the gums, and before they were brought in contact with any agents from without. The fluids of these sacks were undoubtedly acidulated, and this acidulation depended upon some peculiar cachectic habit of body of the various members of the family to which he referred. He could call up a hundred examples of this kind, but one would suffice.

Again; they found a somewhat analogous process occurring in the destruction of the roots of the temporary teeth. This had usually been attributed to the action of the absorbants, but experiments had shown that the extraneous substance which is brought in contact with

them, before the destructive process commences, exhales an acidulated fluid, which has a stronger affinity for the lime of the teeth than the phosphoric with which it is combined; and it was usually regarded as unphilosophical to attribute to two causes an effect when one alone was sufficient for its explanation; and in this instance he supposed that the acid exhaled or thrown out from this extraneous body, coming in contact with the roots of the temporary teeth, as the chief agent in breaking down the calcareous material; then the absorbents might come forward, take up the residuum, and carry it back into the general circulating system. He could not conceive that vessels so minute and delicate as the absorbents, were capable of rasping down a substance as hard and resisting as the roots of the teeth.

Dr. Clark, of New York, requested Prof. Harris to touch upon the fact, that in many mouths, the caries commences at the exact edge of the gum. It seemed to him that the cause might be found in the secretions of that particular part of the mouth.

Prof. Harris said that was undoubtedly the explanation. The suggestion just made went most strongly to establish the correctness of the views he had advanced; for where the mucous secretions of the mouth were first brought in contact with the teeth, and especially where they were longest retained, was the spot where they most frequently discovered the first evidence of their destructive ravages. This is especially the case upon soft teeth—teeth easily acted upon by chemical agents. He was aware that a variety of theories had been propounded with regard to the cause of caries of the teeth, but in his opinion, it was the result of the chemical decomposition of the earthy salts of the affected part, sometimes accompanied, but more frequently followed by the disorganization of the animal frame-work of the afflicted portion of the tooth.

The question was often asked, “why are seafaring men, and persons residing near the sea-shore, more subject to caries of the teeth than persons residing in the interior of the country?” He had often remarked the fact, and he had often heard officers of the navy say, that since they had been almost constantly on the water, their teeth had decayed much more rapidly than before. He had been unable to offer any explanation, but two or three years ago, while at Cape May, he observed, after he had been there two or three days, that the locks of his trunks were very singularly affected, having turned green. It seemed to him that this must be attributable to some atmospheric influence—to some acid, perhaps; but where did the acid come from? It is well known that the ocean contains salt,—a muriate or hydro-

chlorate of soda. Was it not possible that the evaporation going on continually on the surface of the ocean might set free, to some extent, hydro-chloric acid, which, by diffusing itself abroad in the atmosphere, is brought in contact with the teeth at each inspiration; and might not this act prejudicially upon these organs?—and was it not to the presence of this acid that the change to which he had referred was attributable? This seemed to him a very plausible and rational explanation.

Dr. Dillingham, of Boston, said he had lived for some years in the vicinity of salt water, and he had frequently noticed the decayed condition of the teeth of seafaring men. On one occasion, while practising at Edgartown, a gentleman called on him to have his teeth examined before going on a whaling voyage. He had never seen a more perfect set of teeth than that man possessed. He requested him to call and see him on his return, and some three years afterwards he did so. Five of his teeth had entirely decayed, leaving nothing but the roots, and there were some six or seven that needed to be plugged. He had endeavored to ascertain the cause of this, but had as yet arrived at no definite conclusion. He thought it might be referable to the use of salt provisions, and the vinegar and limes which were used so freely by seamen to prevent scurvy.

Dr. Baker said there was probably no man in the country who had received greater benefit from the writings of Prof. Harris, or who entertained for him a more profound respect, than himself; but on the question of the influence of alkalies on the teeth, he could not agree with him. He thought the absence of cleanliness in the case of sailors was a great cause of the decay of their teeth. It had been said that in the preparation of bread, the acids and alkalies neutralized each other; that was true, but they destroyed the goodness of the wheat, and might, in this way, act upon the teeth.

Dr. Branch, of Illinois, said that he thought there were few who would maintain that alkalies, moderately applied to the teeth, would be productive of injury. He should look further than that for the cause—in the constitutional effect. If there was an excess of alkali, as there often was, in the bread we use, that being taken into the stomach, excited that organ to throw off an extra quantity of acid. If they attempt to overpower nature in any direction, she would resist and perhaps overact in an opposite direction. Thus it was that by taking alkalies into the stomach, we excite the production of acid in the system, and the vessels are excited to an extent that becomes injurious, the acid thus produced acting prejudicially upon the teeth.

Thus the alkali taken into the stomach affects the teeth, not directly, but indirectly. The great secret of a healthy denture was a healthy constitution. Give him a constitution able to appropriate, as a healthy constitution is able, all substances taken into the stomach to the building up of the system, and he would show them a healthy denture. It was sometimes asked what food was best calculated to produce a healthy denture, and that was very proper with respect to a diseased subject; but he maintained that it was little matter what food a person ate, so that it contained any proper nutriment for the body, if he had a healthy constitution, to assimilate the food to the building up of the system. Their attention, as dentists, in this matter, should be directed to those things which were calculated to give their patients, whether young or old, a healthy constitution. He should answer the question, "How shall we produce a healthy denture?" in one word—"produce a healthy constitution."

Dr. Reed, of Newport, N. H., said he had been instructed and edified by the remarks of the speakers who had preceded him. It had been correctly stated, in his opinion, that a person having a healthy constitution would have a healthy denture; but their patients were thrown upon their hands with an unhealthy constitution, and he wished to know the best means at their command for securing a healthy denture to those persons, notwithstanding the unhealthy constitution with which they found them. They had young patients brought to them daily, even infants in their mother's arms, to know what should be done to secure for them good teeth. He believed that acid was the great enemy they had to combat, and therefore he had uniformly directed the use of a mild alkali, to neutralize not only the acids of the fluids of the mouth, but the acids which are produced by the fermentation of the foreign substances which may be lodged between the teeth, in cavities, and beneath the gum, especially upon the buccal muscles, where there was no action of the tongue to remove them. He recommended his patients to use a little nice soap, and cleanse the mouth thoroughly.

Dr. Clark, of New York, said this was a subject of extreme interest to him, and he wished to say a few words, that might call forth remarks from others more capable of elucidating the subject than himself. He felt convinced that the cause of decay upon the surface of the teeth, on the line of the gum, and particularly on the outside of the gum, could not possibly be owing to any secretions there, for the reason that he had cases in his own family, where these places had been cleansed often, and it had been found almost impossible to prevent decay there;

and this, too, when all the other teeth, even where they were crowded, and it was impossible to clean them, had manifested no signs of decay. He was of opinion that the cause of decay there was different from that which produced decay in the grinding surfaces of the molar teeth, and he hoped this discussion would be protracted, that they might have the views of other members of the profession upon the subject. The case seemed to him analogous to the decay of many vegetable substances, to the decay of posts in the ground, and the decay of vessels, where there was an alternate exposure to atmospheric influences and to moisture. It seemed to him that there must be an acid generated at the edge of the gum, peculiar to the place, which, at the moment of its production, acts directly upon the teeth. There were many cases that came to the knowledge of every dentist, where they found that those surfaces were polished and polished, until they were polished through, but still the same action was manifest upon the enamel, and he believed it was almost exclusively confined to the enamel.

Dr. Allen, of New York, said the great object of the Convention was to arrive at facts, and see if they could not do more good in their profession. This was what their patrons and the community demanded of them; and he believed they had at length struck at the root, the very starting point of improvement. As to the cause of decay, they had been told that if they had a healthy constitution, they would have sound and healthy teeth. He subscribed to that; but here was the question—"How should they secure that healthy constitution?"

Dr. Branch, (interrupting,) said that in the remarks he had made, he meant to be understood, that in order to produce a healthy constitution, or to make a diseased constitution healthy, they should study constantly to keep up the balance of the system, by exciting alternately the production of acid and alkali. It was no use to undertake to subdue acids in the system by putting alkalies into the mouth.

Dr. Allen said that was the point he was attempting to reach. It was their duty, as he conceived, to pay most especial attention to those causes which would produce the breaking down of a good constitution. They had been told that it mattered little what they ate, provided they could maintain this balance; and the proviso was well thrown in. In the West, where there were a great many distilleries, cattle and hogs were fed on distillery "slops" to a great extent. If a cow, that had been raised on grass, was fed ten years on "slops," her teeth would become so affected that she could not maintain life by eating grass. If the animal economy was thus affected in the case of the cow by her food, why not look at their own systems and see whether

they were not affected in the same way—whether the same law does not govern us as the cow or the hog. He took the ground that caries of the teeth was the effect of chemical action, produced by the superabundance of acids or alkalies, the one affecting the limy portions, the other the gelatine portions of the teeth. The point was to discover what kinds of food will produce the most healthy condition of the system. He thought that if they were to live on a more simple diet, if they had less to do with acids and alkalies, they might look for better teeth. He thought there was a law in the animal economy that would teach them a good lesson.

Dr. Sylvester, of New York State, referred to a case cited by Dr. Baker in the article read by him, of several students, who had been very seriously affected by the bread they ate, which was mixed with saleratus. He said he knew something in relation to that matter, and that it was not the saleratus alone which had produced the effects spoken of. The boarding-house where the students lived was a cheap one, where the object was to procure the greatest amount of nutriment for the least amount of money. A great portion of their food consisted of gingerbread, sweetened with cheap molasses. It was the sweet and the saleratus, occasioning a disordered stomach, that produced the disease, not the saleratus alone.

He was glad to hear the question brought up with reference to the decay of the teeth of seamen, but he thought they must look for the solution of the cause in another direction from that mentioned by Prof. Harris. He thought he could make this evident by one simple statement of fact. Some years since, having his attention turned to the effect of diet upon the teeth, he determined to make an examination into the condition of the teeth of the aborigines of our country, and accordingly visited the sea coast near the city of Darien, Ga., and spent a day in exhuming the remains which had been there thousands of years, for all he knew, and collected a bushel of teeth, among which he found only one case of disease, which resulted not from caries, but from the wearing down of the tooth until it reached the pulp cavity. Those aborigines lived right on the sea coast; the mounds from which the teeth were taken were not more than half a mile from the sea; so that he thought, if it should prove a fact, that people living on or near the salt water, are more subject to caries of the teeth than people living inland, they must look for the cause in another direction than the influence of salt air upon them. It seemed to him that they might go back even further than the preceding speakers had gone in seeking to account for this fact. It was important for

them to tell those who were becoming mothers, that even before birth, the teeth in embryo exist in the infant, and that causes which influence their formation at that time may have their effect years afterwards. How was it with our ladies? With compressed systems we have a compressed alveolar ridge. If they would effect a change in this matter, they must go back to the primary cause, and ask the women of the country to dress and live according to nature, and then, when their children died, their teeth would be like those of the aborigines of the country, and their profession useless. The manner of living affected the teeth gradually. He had noticed that persons coming to this country from England, with perfectly sound teeth, after living here a few years, found their teeth begin to decay. That it was not the climate, was proved by the fact that the aborigines had sound teeth; it was their mode of living—their hot food and saleratus.

Dr. Dwinelle, said he thought he could answer the question now under consideration in one word—*cleanliness*—positive and absolute CLEANLINESS; studying the necessities of the constitution, and contributing to them in such a manner, that a healthy condition of the secretions of the system will be secured. It was well known that their constitutions were continually changing more or less, from one extreme to the other. They had only to study these changes, and consider that they were, in fact, chemical laboratories, containing every element within themselves that was embraced in the universe, and they had only to use their common sense, and study to regulate things correctly. It seemed to him that nothing was more true than that the decay of the teeth came purely from chemical action, and was owing to an excess of acid or alkali in the system, the acid acting upon the lime, the alkali upon the gelatine. They had only to go into a chemical analysis of their teeth and bones, to ascertain where the trouble lay. He presumed there was not an individual present, who had not prescribed alkalies, under some modification, to his female patients. He knew that the teeth of females, during one period of gestation, decay more rapidly than at any other period of their lives; they must correct this. He did not think that saleratus decayed teeth. They were continually taking substances into their mouths, which, if used exclusively, would destroy the teeth. Dr. Westcott had been over this entire field, and proved to a demonstration, just what effect each individual substance had upon the dentition. It seemed to him, that cleanliness, and a careful attention to the idiosyncracies of the individual constitution—because what was applicable to one individual, was not applicable to another—were the great requisites for securing a healthy denture.

Before sitting down, Dr. D. said, he desired to refer to the remarks made by his friend, Dr. Sylvester. His intimation was, that the aborigines were not afflicted with decayed teeth. It was the general and popular opinion that we were a degenerate race. He begged leave to differ; we were a changing race, but he believed not a degenerate race. He believed we had as good specimens of men, physically, in these latter days, as ever were known in the days of Moses or Noah. His observation differed materially from that of Dr. Sylvester. He happened to be born—accidentally and without consultation (laughter)—in the upper part of New York State, where many Indians were buried. He had not dug up Indians by the hundred, nor gathered teeth by the bushel, but he had desecrated fifty graves, perhaps, and in his perambulations, he had found a great many decayed teeth. He did not know but his predecessors then might have used an excess of saleratus, (laughter) but he only spoke of the fact. He had also in his possession the tooth of an Egyptian mummy, which was very badly decayed, and showed plainly that it troubled its owner, who might have been cotemporary with Noah or Moses himself, with the toothache. We had, too, he believed, an unquestionable specimen of Egyptian dentistry—the tooth of an Egyptian had been found filled. He did not believe, therefore, that we were a degenerate race. In fact, he was not prepared to say that the toothache was not among Job's afflictions.

Dr. Palmer, of Poughkeepsie, was not prepared to deny that the use of saleratus was one of the causes of the decay of teeth, but he believed the causes were multitudinous. He could not altogether agree with the preceding speaker, in the opinion that the teeth of the present generation were as good as those of the preceding. He thought the matter of diet was one that called for their consideration. The question under discussion opened a wide field, and he thought a powerful influence might be exerted upon the community by the discussion there, and much good be the result.

Dr. Priest, of Utica, thought dentists were disposed to ride hobbies. There was no single cause of the decay of teeth. He was often asked, "Is it candy?—is it pickles?—is it sugar?" He had only time to answer, there is no special cause, but a general cause. This cause reached as far back as the influence of the mother. Our children come to us with decayed teeth almost from their birth. It seemed to him, that they should go back to first principles in this matter, and not attempt to refer it to eating any particular kind of food, but strive to get at the principle that underlies the constitution of the patient.

Dr. Frank Fuller, of Portsmouth, N. H., thought it was about time that the old humbug of the injurious effects of soda and saleratus was exploded. That theory was every now and then broached, notwithstanding the assertion of Dr. Harris, in his "Principles and Practice," and in dental publications, that the destruction of the teeth was certainly caused by acids, and not by alkalies, which could not possibly affect phosphate of lime, upon which their strength, although not their vitality depends. Did mild alkalies, such as soda, or saleratus, placed in contact with the teeth, injure them? He would admit, that if they were macerated in a strong solution, it would soften the enamel; but who did this? Did anybody keep saleratus or cream of tartar, in this form constantly, or for any number of hours, in contact with the teeth? Certainly not. They were used simply to make bread, and other articles composed of the various serials. Cream of tartar was mixed with saleratus, carbonic acid gas was generated, and this was stirred up in the bread. In the process of baking, the carbonic acid gas was thrown off, leaving simply a small proportion of Rochelle salt. Did that injure the alimentary passages, or the digestion, in the small proportion in which it was used—the 30th part of a grain, perhaps? By no means. Rochelle salt, as they well knew, was often recommended as a slight laxative, and in his opinion, it would be one of the best ingredients to mix with bread. The tendency of bread was to constipation. If a dog lived on it thirty days he would die; there was no action of the bowels. He held that saleratus and soda did no injury to the teeth. He was very glad, when one of the preceding speakers stated, that he was in attendance on one of the students, referred to in Dr. Baker's article, who partook of the "specific gravity pudding," because it assured them, that the last stone on which that article was founded, had fallen. It was plain, that it was not simply the saleratus that occasioned the sickness and death, but the cheap living, which degenerated the whole system—their cheap molasses in the gingerbread, which generated acetic acid by acetic fermentation. It was his opinion, and one which he believed would be sustained by ninety-nine out of a hundred of the audience, that the great cause of the destruction of the dental organs was acid, mineral or vegetable. Cleanliness was, indeed, a thing that they should always recommend; but this would not always save the teeth. Some teeth were perfect in construction, had so little earthy material, that they were acted upon much more easily than others. He had often seen young ladies and gentlemen, from ten to fifteen years old, with their superior incisors almost destroyed. Cleanliness would not remedy this evil.

It would do much, but the theory should be generally understood, and he hoped that the Convention would set that matter at rest—that acids act upon phosphate of lime, but that alkalies do not, and that if we keep the teeth free from acids, and from extraneous substances, by a careful attention to cleanliness, we do all we can, in the first instance, toward securing sound and healthy teeth.

In conclusion, Dr. Fuller said, he desired to call upon his friend, Dr. Severance, of Great Falls, to explain to the Convention a new theory he had adopted, which he (Dr. F.) denominated “Dental Gymnastics.”

Dr. Severance said his idea was simply, that the teeth, like the other organs, required exercise for their development and strength. This should be secured by a proper attention to the food, care being taken to provide such as would, in the process of mastication, afford sufficient exercise for these organs.

Dr. Townsend had been very glad to hear the discussion, but he thought they did not go far enough back. Theories were very important, for there could be no correct practice without an approximation, at least, to a correct theory. He thought they could not reach the root of the difficulty unless they could go as far back as the King of Prussia did, who passed an edict that such and such persons in his realm should not marry nor cohabit. Two persons whose constitutions could not assimilate, had no right ever to come together. He believed that feebleness of constitution produced feebleness of teeth. It was sometimes said that, in a few years, dentists would not be needed, as people were taking care of their teeth. The youngest member of the profession need have no fear on that ground. As long as persons come together, merely from a fancy for the person, there would be work enough for dentists. How were they in any manner to remedy the evil? They all knew, that in the flour they used, the hull was taken out, and only the starch—he might almost call it—left. It was the outer crust of the wheat or corn that was intended to produce bone, and that had been taken off. The consequence was, that they had less bone, and the bones were not of solid texture. He had often been consulted by ladies, with regard to the decayed teeth of their children, two or three years old, and he had sometimes said to them—what might almost seem impudent, but he did not mean it so, and they understood it—that they had not made their children well. He believed, from an experience of twenty-five years, that the main cause of decay was to be found in the formation of the teeth. They all knew that it was just at the folds of the ena-

mel that the decay commenced in molar teeth, and that it was in the interstices between the teeth, at the margin of the gum, and perhaps a little beneath, that caries commence in the incisors, cuspids, and bicuspid. Wherever there was a bad formation, and a want of cleanliness, they had this result—the chemical decomposition from the acidified food, and from the acids of the fluids of the mouth, became concentrated at these points, where the extraneous substances could not be removed. Here, it seemed to him, was the true cause of caries. Where they found a perfectly developed body, they would find, in a majority of cases, a perfectly formed set of teeth. This perfectness of formation, as it gave to the body grace, strength, agility, power, gave, in the same way, tone, strength, smoothness, and capability of endurance to the teeth. The first difficulty he had mentioned could not be reached; they could not prevent men and women from marrying and having children whose constitutions were not adapted to each other, and they must do the best they could to arrest the evil after it was formed. He wished the profession to discover some method of prevention of the injury by acid fermentation, even in the worst formed mouth. If they could so arrange the diet of their patients, that it should contain just the proper amount of alkalies, and tend to produce a perfect dentition, they would perform one of the greatest services to the community that any set of educated and scientific men could possibly do. He hoped to live to see the day when this should be accomplished. He trusted that many of the young men who graduated at our colleges, would turn their attention to what he might call chemical dentistry; for many of them were apt to take hold of manipulation, and become indifferent to everything else. He did not want them to be satisfied with routine work, when they ought to go forward.

Dr. Stackpole, of Dover, N. H., said he thought they would all agree that it was as impossible to lay down any specific, special rules in dentistry, as in the treatment of disease. Good, common sense was the great thing to be exercised every where; they must take things as they were. He knew they could go very far back, and see very remote causes, but it was not always that they could give advice. If a lady, in the bloom of youth, came into his office, and he saw that her teeth were imperfect, it would be a very delicate matter to say to her that she ought not to be married, or to tell her lover that he would commit a great wrong by making her his wife, because, if they had offspring, they would have bad teeth. They had, therefore, to take things as they were, and so far as they could give advice on general principles, so far they would do good. His advice would be of a gene-

ral character ; take care of the general health, live in accordance with the laws of nature, (so far as they can be ascertained,) and seek to develop the system in all its parts, then the teeth will be developed perfectly. He had no theory to establish or overthrow about acids or alkalies, but if they saw any error in the system, if they saw anything in the laboratory indicating too much acid, or too much alkali, let them, as far as possible, correct it, and they would improve the general health, and that would have a tendency to promote a healthy condition of the teeth.

Dr. Waters, of Waterville, Maine, expressed his concurrence in the general views presented by Dr. Townsend, but not altogether. He had told them that bread was made out of a substance from which the bony material had been thrown aside. There were two substances found in man in greater proportion than any other—he referred to phosphoric acid and lime. Bone material must have phosphoric acid in order to be bone ; the germ of the wheat, he apprehended, contained that phosphoric acid more than the hull. He did not know that this was so, but he had theorized himself up to this point. He conceived that we existed before there was any action of the stomach, and before the stomach was formed, and that the nervous organization was the first that had any partial completion, and that it must have a completion in the germ before any other part of the organism could be elaborated. That was his theory, and he wished those persons who had a deep insight into theorizing, would take this matter up. Could nervous matter be generated without the presence of phosphoric acid ? Did not that acid, in its combination with certain other acids, always manifest itself in nervous action ? In order to get at this, it would be necessary to understand, what was generally conceded by physicians, that when a person undergoes extreme nervous agitation, from whatever cause, phosphate of magnesia is the result ; and if this is not carried off through the urine, the patient suffers from neuralgia.

At this point, Dr. Waters gave way for a report from the Business Committee, who recommended that the discussion on the subject under consideration terminate at half-past twelve o'clock, (in five minutes,) and that the remainder of the forenoon be devoted to the subject of filling teeth, and the afternoon session to a discussion on the best method of treating alveolar abscess.

Without taking the question on the report, the Convention voted to lay the question under debate on the table, with the understanding that it should be resumed at a future time, and took up the subject of filling teeth.

Dr. J. A. Cummings, of Boston, here announced that the dentists of Boston had made arrangements to invite their friends from abroad to an excursion down the harbor, and wished them to hold themselves in readiness at 2 o'clock on Thursday afternoon. [Applause.]

Discussion on the best mode of filling Teeth.

Dr. Taft, of Cincinnati, suggested, that in the discussion of the subject now before the meeting, each person should select such a case as they might choose, and describe their method of operating throughout. This method would bring out many things that in a more general discussion would be overlooked.

The suggestion of Dr. Taft was agreed to.

Dr. A. Blakesley, of Utica, N. Y., commenced the discussion. He selected as his case for illustration, the approximal cavity of an incisor. He commenced by examining the cavity carefully, and then removed, as neatly and thoroughly as possible, the decayed portions. His next object was to form the cavity; and in doing this, he used instruments peculiar, perhaps, to himself, principally the old-fashioned English broach, in little handles, with the ends made a cutting point, in the form of a chisel. After he had formed an angle, say of eight or ten degrees, and a little dowel-shaped point on the upper and lower surfaces, and on the side at the base, he formed a little groove from one point to the other. Then carefully running along under the front surface of the enamel, he formed a little depression, in a rounding manner, until he approached the lower or cutting edge of the tooth. When they reached that point, they will generally find that they could make another little dowel-shaped point there. Then he directed his attention to the labial surface of the tooth. In many cases, the enamel was broken away, and the tooth so far decayed, that he could not form a groove or point anywhere, and then he had to depend upon the base he made where he commenced, and in the end of the tooth where he terminated. Something might be gained by a groove from point to point in the labial surface, from end to end.

Having described his method of preparing the tooth for filling, somewhat more at length, Dr. B. then gave a very interesting description of the course he took in filling the cavity, by the aid of diagrams on the black board, but the description can hardly be made intelligible in print. [This remark will hold good with regard to all the subsequent speakers on this subject.] Dr. B. said that within the last few months he had changed his whole mode of operating, except in his manner of preparing the teeth before filling. He had been led to do so by a series of experiments in the use of a new foil, which superceded any he had pre-

viously used. In his former method of operating, there was always a feverish uncertainty ; but now, with the gold he used, and his instruments, which were sharp points, he thought he knew that every point was filled hard enough, so that if any accident happened to the tooth, and any part of the filling was lost, the whole was lost ; it did not come out in particles at all. In operating upon front teeth, which had given him more satisfaction than anything else, he restored the shape of every tooth as he went along. The gold he used being chemically pure, was, at his own suggestion, prepared by A. J. Watts & Co., at Utica, and was identical with the "Crystal Gold Foil," prepared by them now, which he obtained fresh, and was not, therefore, subject to the same embarrassment under which others labored who obtained their gold from a distance. He took a sheet of No. 5 of this gold, and, with his hands very dry, rolled it into what might be called a rope, and then cut it into pieces as nearly square as he could. Then he took another sheet, which he cut through the centre, and made it into folds, and so with a third, the folds being made into lengths according to the size of the cavity, longitudinally, and quite small. It had taken him as much labor and care to learn how to use the welding-gold successfully, as it did to learn how to use gold at all in the first place. The instruments he used were very simple, and much reduced in size—three or four summing up the whole in his ordinary operations. The smallest was perhaps the size of a medium-sized pin, the end cut into three delicate points. The largest was about the size of a common knitting-needle, and in that he made four points, not too deep. Then he had another instrument about half way between these two. With the middling-sized instrument he commenced setting up the pellets of gold on the sides, until he got to the very centre of the tooth, and until he felt sure that he had introduced enough to fill the tooth from side to side. He did not give much pressure at the commencement ; but when the tooth was filled, he pressed the gold, partly sideways and partly by moving the hand back and forth, until it grew harder and harder. It was sometimes said that cohesive gold hardens too quick, but it was not so with him ; this he avoided, either by not attempting to harden it when he put in the pieces, or by pressing it lightly and carefully until he had compressed it solid ; then, with a finer instrument, shaped so that he could pass it between the walls of the cavity and the portion of the filling he had placed there, he endeavored to free it slightly from the wall. If he found he could do this, he took a smaller pellet, and placed it in this little artificial cavity, and pressed it slowly

along until he found he had got nearly to the bottom of the cavity, and then he gave it a hearty push until it was filled up hard. Then he proceeded to the other side, and by the time he had done that, this portion of the cavity was filled, to all intents and purposes, and lay without any motion at all; and thus he was relieved from all uncertainty with regard to the success of the operation. Then he commenced with the other pellets, and filled up from side to side, until he had perhaps two-thirds of the whole length of his cavity, when he took an instrument a little straighter, with a depression in the edge, to hold the pellet, which he inserted at that point, where, from the shape of the instrument, he was able to weld it perfectly, and then he went and filled up his cavity flush with the common surface of the tooth. Then he commenced carefully to restore the shape of the tooth, and finished it up by polishing in any way he pleased. He had never lost a filling inserted in this way, and he was thus relieved from the uncertainty with which he was troubled in years gone by. His patients often said to him—"My dear sir, my teeth look better, you have restored their shape; I am delighted." He supposed they were, and he was himself, so they enjoyed it together. He thought the difficulty that was found in using the cohesive, welding gold, was owing to the fact that it was used in too large quantities, with too large instruments, and the pressure applied too soon. He regarded this gold as very valuable to the profession, as it would enable them to operate in many cases which could not be reached by using unadhesive gold.

In conclusion, Dr. B. said he had never expected to see such a body of men as had met there, gathered together to advance the science of dentistry; he could not express his feeling. There was a time when he had not felt proud of his profession; but now he did. (Applause.) He expected to meet with them as long as he had strength to do so.

Dr. Hawes, of New York, inquired how Dr. Blakesley kept the tooth he was filling dry.

Dr. Blakesley replied that he had accomplished this by using napkins of all sizes, and bibulous paper, which he inserted on the points of his instrument, changing them often.

Dr. E. J. Dunning, of New York, was then called upon and came forward. He said he was not accustomed to describe his operations, but he should be happy to give the Convention any information in his power with regard to his method of operating, if he had anything that was peculiar to himself, which he did not know that he had. He would take, as an illustration, a case which he regarded as the most difficult they had to meet, and one in which there was the most failures,

uamely, the approximal cavities of a bicuspid tooth. They presented great difficulties owing to the breadth of the surfaces.

Dr. Perkins, of Milwaukie, suggested that Dr. Dunning should take for his example, the second lower molar, posterior surface, to which Dr. D. assented. He said the main difference in the treatment of this case, would be the various methods that would be used to prevent the overflow of the saliva of the lower jaw. And here he would venture one general remark, which seemed very appropriate at this point, and that was, that skill in performing these operations consists more in the preparations that make the work easy, than in the work itself. It would be impossible to fill the cavities of the posterior surfaces of molar teeth, unless the operator could see pretty well; to fill them by the reverse action of mirrors, would be difficult, at least he did not undertake it. In the case referred to he should consider it necessary to carve the surface of the tooth, if it was a case where he thought it best to cut the surface at all, with such an inclination that he could get the light upon it. Forming the cavity was a simple matter of using instruments turned at different angles—simple variations of the angle, or the inside of the cutting instruments. He used the hoe-cutting instrument of different lengths and angles. There were cases where it was necessary to leave one wall of the cavity without an edge; but he had always been careful, and nervously so, about making sure every side of the cavity, if possible. He considered one of the greatest advantages of crystalline gold to consist in this; that they might leave some of the surfaces without cutting them so thin as would be necessary to make them retain foil, leaving a weak edge instead of a strong one. In cases where a free flow of saliva was anticipated, he liked to have a pretty large mass of absorbing matter, napkins or paper, so placed as to cover the sublingual ducts and the buccal ducts, damming them up firmly, so as to prevent the oozing out of moisture or blood, or the mucous secretion from the surface between the teeth. In some cases he used a ligature; but more frequently, if circumstances were favorable, a wedge of pine wood, so cut as to be retained tightly on the gum, and so that the shape of the teeth might retain it at the edge of the cavity, braced firmly upon the edge of the teeth. It produced considerable pain, but the end obtained, that of securing perfect dryness of the lower part of the cavity, was of great value. The napkin, the paper, the wedge and the ligature, so far as he recollected, comprised all the means he had employed to obviate that difficulty, and he found very few cases where they were not sufficient. He did not like adhesive gold, he wanted a gold that would go into a cavity

like kid, or thin muslin, and present as little resistance to the pressure of the instrument as possible, in any direction. After having applied any pressure to the gold, it was a very great object to avoid moving it afterwards, and he had been in the habit, for a year or two, of using a second instrument in his left hand, for the purpose of holding the first few pieces of gold in their place. Even in the case of operating on the lower jaw, he often got his patients to hold the sublingual compress, and used both his instruments. He found a very great advantage in the use of two instruments, in regard to the facility of introducing the gold, for he could make many passes with his left hand that he would otherwise be obliged to make with his right, and in quicker time get the pellet to its place.

A gentleman here inquired how the napkins were retained in their place when both his hands were occupied.

Dr. D. replied that the upper napkin required no retention, being placed over the buccal glands, and adhering to the surface of the teeth. There was very little difficulty in retaining the one placed over the sublingual glands; often it would be retained without assistance, if placed skillfully under the tongue; but he generally let his patient place the first finger of his right hand on the napkin, and keep it in place. He often had to change the napkin, which he did without difficulty. Still, he considered that there were cases where it was next to impossible to fill a tooth dry. He found a great many bounds to his skill.

Dr. Hawes, of New York, asked if the napkin did not conceal the cavity from the light, and how Dr. D. managed in that case?

Dr. D. replied that that difficulty varied in different mouths. There was only one way to answer that question, and that was, "stretch it!" (Laughter.)

Dr. Hawes.—That is the very question. With an instrument in each hand, and a napkin in the mouth, how do you "stretch it?" (Laughter.)

Dr. D. explained how he did it, by distending the mouth by extending his finger, as he carried the pellet to its place on the instrument. He recommended his brethren to adopt the practice of using a second instrument, if they had not already done so. It overcame the difficulty of hidden cavities, and of broad cavities, where they had no sharp angles to retain the gold in its place when it was first put in. He had found it of great advantage, and had succeeded in overcoming difficulties that he could hardly have conquered in any other way.

Dr. Fuller, of Portsmouth, (N. H.) inquired if, when the tooth was

partially filled, the filling got wet by accident, did he think it best to remove it?

Dr. D. replied, that he had no objection to the cavity being wet. The evil laid in the injury to the cohesion of the gold when it was packed together, and the finishing up afterward. He thought it best to dry the filling.

Dr. Blakesley inquired what objection the speaker had to cohesive gold?

Dr. D. said he could not use it. He formed his gold into pellets; he did not care about the size of the pellets, only he graduated them to the size of the cavity. He made them globular, like pills. All his pressure was from the centre toward the external walls of the cavity, consolidating in that direction as he went on. His instruments were cubical in their structure, filed down to a plain surface, and turned at different angles. These were plugging instruments without serrated points. The object in serrating them was obtained by sharpening the quadrangles on a stone, which he always did before using gold, to secure the angles of the plane, making it perfect.

Dr. Roberts, of N. Y., gave an account of an operation performed by him on a lateral incisor, which was so much decayed that he could not obtain a wall sufficiently strong to bear the pressure necessary to fill the tooth. He imbedded the tooth, and the one next to it, in gutta percha, up even with the point of the tooth and overhanging on both sides. He then filled it with sponge gold, though he thought he could have done it equally well with adhesive gold, by properly preparing it and packing it in the same way. He held his thumb upon the gutta percha and filled the tooth, and could use nearly as much pressure as if the tooth had been strong. In such cases it was necessary to fit the gutta percha perfectly, otherwise they would be likely to break the tooth. After filling, he cut out the gutta percha the shape of the cavity, leaving nothing but the gold for polishing. That was the only way, he thought, in which he could have saved the tooth. He gave credit to Dr. J. S. Clark, of N. O., for giving him the idea.

At the conclusion of Dr. Roberts' remarks the Convention voted that half an hour of the afternoon session be devoted to a continuance of the discussion on filling teeth, and adjourned to meet at 4 o'clock.

AFTERNOON SESSION.

The Convention was called to order a few minutes past 4.

Dr. Perine was the first speaker. He said it had long been a desideratum among the profession to secure a composition for filling that

should resemble the teeth. They had now a composition—of which he did not claim to be the inventor—which was called the dissolving quartz. After this quartz had been dissolved, he had, in connection with his friend, the inventor, forced it to return to a crystallized state, sufficiently hard to cut his name with it upon glass. The preparation of the quartz was very simple; it was easily dissolved and easily crystallized. The difficulty which he wished to overcome was the contraction of the composition after it was introduced into the teeth. He had experimented upon dead teeth, and by adding a little after the shrinkage, he could make a perfectly hard filling, and give it any shade he desired. He did not wish to present this to the Convention at this time, nor until it was perfected; but, as he was sorry to say, there were those in the dental profession, as in all others, disposed to steal one's thunder, he was anxious that they should give the subject the benefit of their scientific knowledge, and reap what advantage they could from the invention.

Dr. Allport stated that he had received a paper from Dr. Westcott, of Syracuse, which he would hand to the President.

Dr. Allport then proceeded to illustrate his mode of filling. He said that, perhaps, there was no better cavity to take than the one taken by Dr. Dunning in the morning, with a little alteration. He would take the same cavity, in a small mouth, and a very free flow of saliva, and make a compound cavity of it, embracing not only the approximal, but the grinding surface, which was a cavity difficult to fill, and difficult to keep filled after it was filled. Let them imagine the tooth to be the second tooth upon the left side, and the cavity upon the posterior approximal surface. The first thing to be done in filling such a tooth would be to consider the health of the patient; the next, to separate the tooth, and prepare the cavity. In separating the tooth, he would, in the first place, take a chisel, so formed that he could readily cut whatever portion he thought necessary, to save filing, that being rather more unpleasant than cutting the tooth. He endeavored to make the cut much wider on the outside than on the inside in all lower molar teeth, for in this way it was more easily kept clean. The shape should be concave. He then removed the decayed portions in the usual manner. In shaping the cavity, he endeavored to give it the shape of the original tooth as much as possible, but he never sacrificed a good filling to the shape of the tooth. After he had removed the decay, he clipped off the enamel around the edge of the cavity with the chisel, and made it as smooth as possible, slightly counter-sinking it, so that he

should have no trouble in making the edge of his filling perfect. He took particular pains to avoid sharp points, which were liable to be broken off in mastication.

The next thing was to know what kind of gold to use. He thought it was necessary, in some places in a tooth, to use gold that was remarkably soft. He had never used any for that purpose which he considered so good as that made by Jones, White & McCurdy, and by Abbey, of Philadelphia. At this point he preferred to use non-adhesive gold. The next thing was to prepare his gold in such a manner as to produce a perfect filling, and consume as little time as possible in manipulating in the mouth. Taking such a portion of non-adhesive foil as might be necessary—perhaps a whole leaf—he folded it into a *block*, of suitable size to cover the bottom of the cavity, and extend beyond the edge. He also prepared two similar blocks, large enough to cover the walls of the cavity and extend beyond the edges at the side and top. He then prepared his cylinders in the usual manner, and of two lengths—the one long enough to extend from the anterior wall to beyond the edge, the other of a little more than one-third of the depth of the cavity. For the balance of the operation he prepared a quantity of Watts & Co.'s crystal gold, or crystal gold foil, which he used in small pieces. In bad cases, where the gums protruded and troubled him with hemorrhage, he used a wedge of some soft wood. If it hurt, that was the business of his patient; it was *his* business to do his duty. In putting in the wedge, it would rise above the cavity, and, with a burr, he shaped it to the precise form of the cavity. Then taking his place on the *left* of the patient, with his instruments in convenient position, he put a piece of flax cotton, rolled large in the centre, and small at the ends, under the tongue, where it would lie readily, and also a smaller roll under each cheek, directly over the salivary glands; then, placing the chin in the palm of the left hand, he laid a folded napkin around the back of the tooth, so as to embrace it on three sides, and held it in place by the fore and middle fingers. With a little skill, these napkins can be removed and dry ones substituted as often as necessary. In placing the gold in the cavity, he grasped the instrument between the thumb and fore and middle fingers, and pressed the lip back with the little finger, and first laid the prepared *block* at the bottom; then placed the lateral *blocks* in position, thereby forming a series of layers around the walls, and extending from the bottom to above the top of the cavity; he then filled up *two-thirds* of the space, with the cylinders laid parallel with the floor of the cavity, then packed a sufficient num-

ber of cylinders against the anterior wall, and perpendicular to the floor, to hold the lateral blocks firmly in place. The whole inner surface was then thoroughly compressed against the walls of the cavity, and the balance filled up with the crystal gold or adhesive foil, taken up with the point of a serrated instrument, and with it packed into the cavity. After his gold was perfectly packed he filed it off, and the rest of the operation was as usual. In conclusion, Dr. A. exhibited a very simple instrument, the invention of Dr. Garrett, of Wilmington, Delaware, for keeping the napkin over the ducts.

The half hour, to which the debate on this subject was limited, having expired, a motion was made and carried to extend the time.

Dr. Dwinelle remarked that something was said in the morning about riding hobbies. He had large charity for those who rode hobbies, for he rode them himself. Before proceeding to describe any particular mode of filling teeth, he would like to describe a new method which he had adopted for (they must excuse the profanity) damming the ducts. It was a physiological fact, that the muscular effort of throwing the tongue back operated in such a manner upon the sub-lingual ducts, that they would not exude a particle of moisture, it closed them. He took a little piece of gold wire, and in three minutes twisted it in the form of tongs, half an inch long, or shorter. He just clasped the little protruding openings of the ducts with the tongs, let the tongue find its place, and they were effectually closed. The truss principle had before been resorted to by him, and it was a very good one. The old method of bibulous paper and napkins, too, was a very good one.

He would assume that he was required to perform a very difficult operation, which rendered it necessary that the mouth should be kept open an hour or an hour and a-half, or even two hours, and he did not want the gums to get wet. He took some strips of fine bird's-eye linen, four inches wide, and tore them into strips from an inch and a-half to two and three inches in breadth, and coiled them up into a roll, so that they were about the size of an ordinary sized little finger. He turned them round in a crescent shape, and laid some half dozen of each size of these rolls on his table, in the form of an arch. He wiped the mouth dry and applied a crescent shaped roll to the ducts on the upper side; it would keep its place, adhering to the mucous membrane. He did ditto on the lower side. He then turned to the sub-lingual ducts and applied a larger roll. In a great many cases the mouths would remain dry during the whole operation; so much so, that oftentimes, in removing the linen, it was found necessary to

moisten it, in order to avoid tearing off a portion of the mucous membrane.

Dr. Dwinelle then described an operation which he had performed on an inferior molar tooth, very much decayed, which he took it upon himself to say had been perfectly successful. The lingual wall alone remained, and the gum protruded over into the cavity. [The speaker drew a representation of the tooth on the blackboard.] He wanted to restore the tooth to its original form. In order to do this, he had got to build up the approximal wall artificially. One way would be to drill pits or cells, and fill these pits with crystalline gold, letting them rise above the surface, extending over and interlocking with each other, until he had built up the wall; then he could extend it out and work in the crystalline foil until he had erected the whole superstructure; then he took crystal gold and filled up until he got somewhere near the top of this protuberance, and then filled the whole with adhesive gold, in such a manner that it would correspond with the shape of the tooth, packing it until it crowded the gum back, and gave an entire wall. He then alternated with the crystal gold foil, occasionally pressing this back to give the proper formation to it, until he got up above the gum wall, then he let it double up together, and built directly upon the superstructure. The advantage of this process was that his gold, from beginning to end, was equally consolidated, it was a unit, continually accumulating, from beginning to end—just as one portion of clay added on to another became a part of the whole. It was finished in the usual manner.

Dr. Roberts asked what was to be done if the cavity got wet.

Dr. D. at once imagined himself submerged in the middle of the operation, and proceeded to describe the process of restoration. Every surface, he said, was a receiving surface, except the last one. The first thing, after making the mouth perfectly dry, was to pass a burnisher over the whole of that surface, then press bibulous paper upon it, and dry it anew. He then cut over the surface to get a new surface; then dried it anew. Then he cut the surface backwards and forwards and across, until he had worked it up into a velvet surface. Previous to this, however, he had taken a little strip of crystal gold, No. 1, and annealed it, and got it into particles corresponding with the size of the hole. Having secured his velvet surface, he took a piece of annealed gold, fresh and perfectly adhesive, and laid it on top, and with instruments covered all over with serrations, pressed it down to its place. He then went all over the surface with an instrument terminating in two points, and finally worked the gold into perfect integrity with the

other, and was restored to where he was before the flood-gates were opened. He would venture to put those plugs to any test they choose; they would not separate at the point of submerging any sooner than anywhere else.

Dr. D. then went on to describe an operation for restoring lateral incisors that had lost a very large portion of their substance, say one half, which he did by means of diagrams, in a very acceptable manner. His great care was to be sure that his gold, at every stage, was a unit. When the tooth was filled, he said he did not like the gold glittering surface, which reflected light only one way, while he wanted it to reflect light every way. To remedy this, he took a piece of sandal wood, the end moistened and broken up a little, and plunged it into pulverized pumice, and stippled over the entire surface, and then washed it, and so continued until he got a velvet surface with a whitish yellow tint. He had a friend who had four frontal incisors filled as much as the one he had been describing, and he would much prefer the teeth as they were to any artificial teeth.

Dr. Straw, of Bangor, inquired if this filling could be brought to the cutting edge.

Dr. D. replied that it could. In the very case he had been describing the filling occupied a large portion of the front surface. After filling the tooth, he dismissed his patient, but he found afterwards that he articulated only upon the inner surface of the gold. This had bent it round a little, but had not disturbed the joint at all.

Dr. Townsend, of Philadelphia, then described his method of filling cavities in the proximate surfaces of bicuspid teeth, so as to make them stand. It was a difficult thing to prevent the filling in such a tooth from being very imperfect. He said that the way to make difficult things easy was to get at them fairly. He wanted a cavity that he could see into, and there were some cavities that he could not see into unless he had plenty of room to throw light in. In the case supposed, the first thing would be to see if the tooth approximating to the one to be filled was sound, for if he found a carious spot there he knew he would have some chance of getting more room from that tooth for the probe. If he found decay there, he should take care in removing it to preserve the appearance of the tooth on the outer or buccal surface, making the space wider considerably at the sub-lingual than at the buccal surface. This, for two reasons; one, to preserve the shape of the tooth; the other, because the food is always pushed in towards the tongue, not outwards towards the cheek. The next step was to ascertain how strong the enamel was, and how much

he had to cut away. In cleaning out the cavity, one thing was to be guarded against, and that was, not to run to the nerve needlessly. He was satisfied that at this day, when the hobby of killing nerves was ridden so furiously, there were many killed needlessly. His theory was to save the life of the tooth when he could; he therefore used instruments with a broad cutting edge, that would not be likely to drop into the nerve cavity. After cutting into the surface, he then endeavored to secure a neat edge at the upper end of the tooth, and then proceeded to cut away the lower edge, having these edges as nearly square as he could, particularly at the margin nearest the edge of the gum. To prevent moisture, he used, besides napkins, in cases of this kind, a wooden wedge, dove-tailed. He used generally orange wood; pine wood he thought too soft, and hickory too unyielding. This should be inserted gently, and by the exercise of proper care, the gums becoming little by little obtunded, it could be placed where it was wanted; this entirely stopped the water above from coming down; and then, having his napkins ready, he was prepared to go to work. The question was to make a filling, and to make a filling at the upper part a little more perfect than anywhere else. He was eclectic in his practice; he used gold in all imaginable shapes. For such cases as this, he took a sheet of gold and folded it lengthwise until he had, as nearly as he could judge, the width of the depth of the cavity, and a little more; he then folded it over upon itself for the length, and then folded it into a block. He folded four or five pieces into the same shape. Then, having the cavity dry, and cutting other gold into little pellets, with sharp points, that he could insinuate anywhere, he proceeded with his second instrument held in the left hand—the dextrous use of which he considered indispensable—to place these blocks of gold in the tooth, pressing them firmly to the upper margin of the cavity, and allowing them to project a little. He packed the gold away with one instrument, while he held it with the other. It was a rule with him that if his first piece became dislodged, he took it away and put in another, and never attempted to use it again, because it would not fit another place. So he went on building up with similar pieces with the lamina pushing outwards. When he got near the end he began to pack in with his pellets, and so on, filling in all the way, until he got down to the end of the cavity. Then he endeavored to insert his instrument between the folds, but usually he found that when he had gone on with the pressure upwards and inwards, there was no place where an instrument could be inserted, except a pointed one, unless a great deal more force was used than

was necessary. Some fillings needed to be harder than others. A filling might be perfectly solid, and yet not be as hard as molten gold, and the filling under consideration was one of this character. It might be put in perfectly good, it might have its junction with the walls perfect, and yet not be so solid that the instrument could not be inserted into it. Then he went over the gold with an instrument with four points, with which he condensed the whole surface. He had kept the cavity dry, for he considered any condensation after the filling had been wet, as almost, if not entirely, useless. He burnished the gold for a considerable time, for he found it had a good effect. He then filed it and burnished again, and so on until he got it down to the edges, and until it was one continuous surface. The burnishing compressed the gold considerably. After he had filed and polished, he went over the surface with a piece of sandal wood, (which he thought as nice wood as could be used,) and very finely pulverized quartz, which was a little finer in its grit than pumice. He then washed perfectly clean and burnished again; and then took a piece of clean stick and rotten-stone, and it was a curious fact that the bone of the teeth was polished more rapidly and smoothly with rotten-stone than with pumice, though it was finer, and entirely removed the file-marks, so objectionable in an operation of this kind.

On motion of Dr. Straw, of Bangor, the regular order of business was suspended, and Dr. Sanborn, of Andover, was invited to address the Convention on the subject of taking casts.

Dr. Sanborn said, he spoke only because he thought they would find many advantages in knowing the power of the metals with which they took casts. He got the first hint of his method from Dr. Hawes, of New York. He had a sheet-iron cup about two-and-a-half inches square, and one-and-a-half deep. He filled this cup with lead, having the plaster cast prepared, and the damper it was, the better; and let it be remembered, that if they could plunge it in the moment they took it from the model, the better it was. The secret was, to begin when the lead was entirely molten, and keep working in from the edges to the centre, so as to have it gradually cool. When it had cooled so that they could scoop it up, and become granulated, he could make no better comparison, than to compare it with hasty pudding when it was done—it would stand up of itself—then take the cast, and plunge it in just right, and the moment the surface of the cast struck the lead, it received a perfect impression, and gave a perfect *fac simile* of the plaster cast. Then, if he was in haste, he plunged the cup into water, and took up his tin, and put it into the furnace, melting till it

was just molten. While this was going on, they might take a little strip of sheet lead, fold it as they wanted it, and twist it round, so as to fit exactly. Having taken out the plaster cast, he melted the tin, which was to be treated in the same manner with the lead, string it up from the edges to the centre until it granulated, and the moment it began to harden, he poured it in, and had the cast. He could take a cast of the mouth in plaster, and be prepared in three-quarters of an hour to strike up as perfect a plate as they could get by any other process.

In answer to inquiries, Dr. Sanborn said, he used zinc many years ago, but had found lead far superior, when rightly used; that he regarded pure tin as altogether more advantageous than any combination of metals; and that the impression taken was perfect.

Dr. Spaulding, of St. Louis, moved the appointment of a committee by the chair, to take into consideration the subject of Dental Nomenclature, and report at the next meeting. He said it was evident from the discussions there, that they had no fixed nomenclature, especially for mechanical operations, and he thought the dental profession was far enough advanced now, to have a fixed meaning for the terms used in its practice.

Dr. Seabury, of Providence, thought this want had been well met in Prof. Harris's Dental Dictionary.

Dr. Spaulding replied, that notwithstanding the publication of the Dictionary, there was still much confusion in terms, and he thought the appointment of such a committee would call the attention of the profession to the matter, and have a good effect. However, if there was any objection, he would withdraw his motion.

The Convention then took up the question of the best

TREATMENT OF ALVEOLAR ABSCESS.

Prof. Harris was the first speaker. He said, he did not know that he could say anything new upon the subject, or anything different from what he had stated elsewhere; but a very novel and successful method of treatment was described to him some two or three years ago, by Dr. F. H. Badger, of Nashville, Tenn., which he thought would be interesting to the members of the profession, and he would describe it.

In the treatment of alveolar abscess, it was important that the remedial agent should be brought directly in contact with the inner walls of the sac, and unless this could be done, it was exceedingly difficult to treat it with much success. Impressed with this opinion, Dr.

Badger adopted a somewhat novel and ingenious method of procedure. In the first place, he closed the external opening of the cavity leading to the central chamber of the tooth, with gutta percha or gum elastic, perforating this at the most convenient point, and then charging his syringe with the medicated agent he wished to introduce—a solution of nitrate of silver, or an alcoholic solution of tannin and gum ben-zoin—he injected it into the tooth, and it passed up through the canal, and escaped through the external opening of the gum. In this way, the medical agent was brought immediately in contact with the walls of the sac, and with the walls of the fistula opening from it, and which communicated with it. He (Prof. H.) had been completely successful with this method—more so than with any other—but instead of using nitrate of silver, he had used a solution of creosote, as recommended by Dr. Ballard, of New York. There were some cases where so large a portion of the vitality of the tooth had been destroyed, that nothing short of its removal would effect a complete cure. At least, he had failed very frequently. After having apparently healed up the ulcerated surfaces, and obliterated the fangs to the very extremities, a recurrence of abscess had taken place, perhaps three times in twelve months; although in these cases, the amount of matter secreted and discharged through the gums, had always been very small in comparison to the discharge when the root was not completely obliterated.

Some twelve or fifteen years ago, Prof. Harris said, he was requested by a medical gentleman of Baltimore, to visit a patient of his, who discharged three or four times a day, a half dozen drops of pus from behind the margin of the palate. The physician had been unable to discover the source of this matter. At first, he thought it might come from the maxillary or frontal sinuses; he (Prof. H.) thought it might be secreted by the mucous membrane of the posterior nares. On visiting the patient, and becoming satisfied that it came from neither of these places, he passed his finger round under the upper lip, outside of the alveolar border, and immediately over each of the central incisors, a small tubercle about half the size of a pea was discovered; and perceiving that these teeth had lost their vitality, he had little difficulty in arriving at the conclusion that the pus came from abscesses at their roots, and that it had made for itself a passage through the nasal plate of the superior maxillary bone, and from thence passed back between the periosteum and mucous membrane, perforating by the posterior portion of the velum, and escaped in the manner described. Under the circumstances, he recommended the removal of the teeth, to which the patient readily submitted, and in three days the discharge ceased.

About six months ago, a lady of Baltimore, about fifty years of age, consulted him under similar circumstances, at the request of her attending physician. The first molar on the left side was in a necrosed condition, and from the appearance of the gum, he had every reason to believe that there existed in the alveolus an abscess, and that the matter had come from it. He advised the extraction of the tooth; she submitted to the operation, and in three days was perfectly relieved.

Some two or three years ago, a gentleman called upon him to be relieved from a similar discharge. But a day or two before, his incisors being painful to the touch, and so much decayed that they could not be restored, he had them extracted. From the description he gave of the condition of the teeth, he (Prof. H.) felt convinced that abscesses had formed, and that the matter came from the inside of the sacs, and he assured the gentleman that within three or four days he would be relieved from the difficulty under which he was laboring.

In cases where the matter was discharged through the crown of the tooth, he employed the same treatment, but it would not be necessary to close the orifice with gutta percha, but merely to inject the fluid forcibly, which would carry it into the sac, and in that way reach the ulcerated walls of it.

In answer to an inquiry with regard to the composition of the solution he used, Prof. Harris said, it was about in the proportion of twenty-five drops of creosote, to an ounce of diluted alcohol.

Dr. Roberts said, he hoped to hear a great deal on this subject, for he had treated a great many cases himself, and he supposed other members of the profession had done the same. He believed thousands of teeth were extracted every year, after alveolar abscesses had been formed, which might have been saved by proper treatment, and he considered this a very important point of discussion in the proceedings of the Convention. At least, it was very important to many of their patients that their teeth should be saved, especially front teeth, after abscesses had formed; and his success in the treatment of such cases induced him to state the method he pursued. He injected nitrate of silver into the root, and continued the injections until the matter ceased to flow from that point. Then he introduced with a small broach, floss silk saturated with creosote, as far as possible clear into the alveolar process. At first, he let it remain one, two or three days, so that the matter should not form and dam it up, and cause pain. When it was removed, it threw off a very bad odor. This process was to be repeated from day to day, and they would find it would take perhaps months to cure the disease. After the tooth was

entirely cured, they should put their gold clear to the very point of the root, and build from that.

Dr. Roberts was asked what he would do if an abscess should form after the tooth was filled, and replied that it would never be so large as before. He said further, in answer to a question, that he did not know the exact proportion of nitrate of silver he had used; it was such as was used for the treatment of gums, and could be obtained of the apothecaries.

Dr. Field, of Waltham, said his experience in this branch of practice had not been very extensive, but where there had not been a fissure open enough to inject the fluid, he had found that by drilling through the alveolar bone, just above the roots of the tooth, he could reach the disease. In such cases, after he had cleared out the cavity, and filled under the root clear to the very point, he then opened the abscess with a little broach, and let the matter out. It seemed to him, that when the sac was full of fluid, by simply injecting through the root, they could force fluid enough to mix with that of the tooth, to answer their purpose. He had done it in every conceivable way; he did not use floss silk, but prepared flax, which was very fine indeed.

Dr. Roberts thought the difficulty with flax would be, the liability that a piece would be left in the cavity.

Dr. Field did not think there was much danger of this.

Dr. Mowe, of N. H., said he took considerable interest in this subject, and gave an account of an operation he performed on an incisor, which had been filled, and apparently well filled. He took a small drill and opened into the dental canal, which he enlarged to the end of the fang, as near as he could judge, and was able to see into it. Then he applied pure creosote, on a bit of cotton, to the end of the cavity, and filled it up with cotton. The patient came again in three days, and the sac formed by the abscess had disappeared. He made another application, and in ten days it was all well, and he filled the tooth, and it had never given her any trouble since. This was three years ago. He had treated another case, where an abscess had gathered on each of the four superior central incisors, and the alveolar process was much affected, in the same way, curing one tooth at a time. All he used was creosote, applied as he had described.

Dr. Roberts said that he should think ten days or even fifteen, a very short time to allow for the operation.

Dr. Mowe stated that he steeped the gold in creosote, before putting it into the tooth.

Dr. Dwinelle said the treatment of alveolar abscess was much better

understood now than formerly. An abscess of this kind was evidence of the presence of a foreign substance,—in all probability, a dead nerve,—which nature was trying to dispose of, just as she did when a grain of dust got into the eye. Common sense said the first thing to be done was to remove the foreign substance; consequently, he recommended the removal of the nerve. The bone of the tooth was not solid; it was full of little cavities, which were full of a foreign substance, the residuum of the dead nerve, which must be absorbed. The best method was to insert the oil of creosote upon floss silk; let it remain twenty-four hours; renew it and insert again, charged with creosote, and so on; then fill the nerve cavity. Still the abscess was there, and had got to be disposed of. Plunge in the lancet; then take a sharp instrument, which answered the double purpose of a probe and an excavator, and plunge it down to the very extremity, and examine and ascertain if there is any foreign substance there. They would often find a deposit of salivary calculus, or something of that sort; such as had been found in the brains, the lungs, even the larynx and other parts of the system. If any was found, it should be all scraped off. Here another principle of the animal economy came in to insure their success, and that was, the scraping of the bone excited inflammation, and this caused nature to throw out a healing fluid, which came to the assistance of the operator. They had then opened the way for the discharge. After the discharge, a drop of creosote was again to be introduced, and the operation was completed.

Dr. Miller, of Worcester, remarked that, although the subject was of great importance, he should say but little at this time. He had pursued the methods of cleansing the fangs, and injecting various solutions into the sacs, as described by previous speakers, and in addition, had used the lancet freely—cutting deep; and into the incisors, with suitable instruments, introduced a granule of crystallized nitrate of silver, one-fourth to half the size of a grain of wheat. He had seen good results from this practice, and would strongly recommend it to the profession. One case, he would mention, however, embracing the superior central incisors, which had entirely baffled his skill. At the time the patient applied to him, the ulcerations had existed a long time, producing an unnatural fullness of the mouth. The openings to the sacs were free—the nerve canal being much enlarged. In cleansing the fangs with a little cotton twirled around a small broach, and dipped in a solution of whatever was used at the time, the patient would frequently experience sharp pain, like that produced from cutting inflamed dentine.

The question was here asked if the pain were not caused by pressing air into the sac.

Dr. M. replied that it was not, as he had thought of that, and used an instrument much smaller than the nerve canal. Careful examinations, at various times, proved the existence of morbid sensibility of the parietes of the dental canal, not, however, equally disseminated over the whole surface. After treating the case from four to six months, without the slightest improvement, it was abandoned.

Dr. Wetherbee, of Boston, described a case which had been under his care, where there was an abscess on each of three incisor teeth and the cuspidati, which had been filled. The case was a very difficult one, from the fact that there were so many decayed nerves and so great an amount of inflammation. He removed the fillings, and outgushed any quantity of offensive matter. He syringed out the cavities faithfully, and also prepared an instrument for scraping the surface of the nerve cavity, as far as he could. This operation he performed on all four of the teeth. He then injected cologne water, for some length of time, and afterwards filled the cavity with cotton, and requested his patient to let it remain several days. At the expiration of this time, she called again, and he found the emission from the gums had somewhat subsided. He finally plugged the teeth without any further introduction of liquids to the nerve cavities. After plugging the teeth thoroughly, he took a sharp excavator, and commenced upon the alveolar process, scarifying the gum, and scraping the alveolar process for some distance round the centre of the opening of the abscess, until he felt confident he had broken up every vestige of decomposition, occasioned by the abscess upon the alveolar process. He then dismissed the case. The lady was much pleased with the operation, and there had been no return, so far as he knew, of the disease. He believed, with Dr. Dwinelle, that, by thoroughly scraping and removing every remnant of the disease, and by injections, the difficulty, in ninety-nine cases out of a hundred, could be removed.

Dr. Forbes, of St. Louis, gave an account of a very interesting and peculiar case which had come under his observation, with regard to which, he desired the benefit of their experience and knowledge. The case was that of a lady whose upper central incisor, on the right side, was attacked so virulently, that the dentist she consulted thought proper to extract it. The disease spread, attacking one tooth after another, which were successively extracted, but without curing the disease. The lady thought she had necrosis, or a disease of the jaw. She had been treated with chloride of potassium, zinc, and creosote.

In his absence, he had prescribed constitutional treatment. It was so interesting a case, that he had called in quite a number of the dentists of St. Louis to consult upon it, and he would like to have the advice of his brethren. [Dr. F. gave a minute account of the present condition of the lady's mouth, but his remarks, from the position he occupied, and the low tone in which he spoke, were, in great part, inaudible to the reporter. The same difficulty was realized with regard to several of the other speakers.]

In answer to inquiries, Dr. F. stated that the patient was a lady, of healthy constitution and simple habits, and twenty-five years of age; that the emission comprised two or three pustules of pus during the day; that there was no dead bone discoverable by the probe; that he could not probe more than a line, or a line and a-half; and that it was not an hereditary disease.

Dr. Straw, of Bangor, recommended an abstemious diet, as likely to do more than anything else.

Dr. Locke, of Nashua, said his experience did not confirm the use of the powerful remedies which had been referred to. He had not been successful in the use of creosote; he had found that the tooth became a source of irritation in the socket, and he had ultimately lost it. He had also tried an injection of nitrate of silver, and in two or three cases, had benefited the patient by its use; but he did not think he had benefited any case by the use of creosote, and he feared if it was used as freely as had been described, the result would be the destruction of a great many teeth, which might be useful if they simply adopted the "let alone" principle. He had used tincture of nut-gall and tincture of tannin, and he thought he had produced better results from their use than by anything else. He had cured several cases with them, and he thought them the safest and most useful remedies for the disease. If the case was not a very troublesome one, it was his experience that it was not best to meddle with it. He was pleased with the suggestion of Dr. Miller, and thought it might be useful in a good many cases.

Dr. Allport suggested the practice of opening into the abscess, and the application of creosote on a pledget of flax cotton, in immediate contact with the apex of the fang—a vigorous application, so as to break up the abscess.

The Convention then adjourned, to meet on Thursday morning, at 9 o'clock.

THIRD DAY—FORENOON SESSION.

The Convention was called to order shortly after 9 o'clock, by the President.

The record of Wednesday's proceedings was read by the Secretary, and approved.

The Chair announced the first business in order, to be the fixing of the time and place for holding the next Convention.

Dr. Hawes, of Providence, moved that when the Convention adjourn, it be to meet at West Point, on the first Tuesday in August, 1858.

Dr. Perine moved to amend, by substituting Cincinnati for West Point.

After a brief debate, the amendment was adopted, and the resolution, as amended, adopted.

Dr. Goldey, of New York State, moved a reconsideration of the vote. He wished the Convention to meet at Buffalo.

The motion to reconsider was put, and lost.

On motion of Dr. Bonsall, a committee of two was appointed by the chair to audit the Treasurer's account, as follows:—Drs. Bonsall, of Cincinnati, and Perine, of New York.

On motion of Dr. Allport, the paper by Dr. Westcott, on "Cheoplasty," presented by him yesterday, was accepted, and a copy ordered to be furnished to the Dental Journals for publication, if they desired it.

Dr. Johnson then moved a reconsideration of this vote, for the purpose of referring the paper to a committee, and the reconsideration was carried.

Dr. Johnson moved that a committee of three be appointed to examine the paper, and report upon it.

Dr. Spaulding, of St. Louis, offered an amendment, giving the committee full discretionary power in the matter, which amendment was accepted by Dr. Johnson, and the motion adopted.

On motion of Dr. Allport, it was voted that the committee consist of the editors of the three Dental Journals.

Dr. Townsend, from the committee appointed last year, to consider the expediency of the establishment of a uniform system of prices, submitted a report, which was listened to with close attention, and frequently applauded.

As the resolution appended to the report contains the substance of the whole matter, we give it only.

Resolved, That in the judgment of this Convention, the formation of

county, town and neighborhood societies of Dentists, is among the best of all methods for the government of their social relations, their mutual improvement, the harmony, dignity and elevation of the profession, and that to such distinct organizations, properly belongs the regulation of fee-bills, the repression of quackery, and whatsoever in the practice, conduct, qualification and character, of individual practitioners, concerns the general well being of the profession.

It was voted, on motion of Dr. Spaulding, of St. Louis, to accept and adopt the report and resolution.

Dr. Miller, of Worcester, (a member of the Business Committee,) then addressed the Convention briefly on the subject of the preparation of business. He concluded his remarks by offering the following resolution, which was adopted:—

Resolved, That a committee of five be appointed by the chair to prepare and arrange the order of business, and subjects for discussion, at our next annual meeting, and that said committee announce the result of its deliberations to the Dental profession, either by circulars addressed to members individually, or through the medium of the several Dental periodicals, as early as January, 1858.

The committee appointed to examine the Treasurer's accounts, reported that they had attended to that duty, and found them correct, and that there was a balance in the treasury of \$40.56. Report accepted.

MISCELLANEOUS BUSINESS.

Dr. Sylvester, of Lyons, N. Y., at the request of a member of the Convention, exhibited a plate, which he said was made as a temporary plate of 18 or 20 karat gold, with alloys of copper, silver and platina. The plate was worn about a year, and when removed for the purpose of constructing a permanent plate, it was found that its palatial surface had become coated with what appeared to be quicksilver, while the lingual surface was in its normal condition.

Dr. Dalrymple, of New York, said that some eight years ago, he made a set of teeth, and two weeks after they were put into the patient's mouth they were returned to him, owing to the plate being, as it was said, of impure gold. He was unable to account for it, and consulted some twenty dentists, neither of whom could give any explanation. But Dr. Reynolds, now of Waterbury, who was then a student in his office, told him that if he boiled a plate in tin, it would have just that same appearance.

Dr. Sylvester.—Then the appearance would be on both sides.

In answer to questions, Dr. S. said the plate was pickled in a porcelain dish; that the male die was of zinc, and the female of lead.

Dr. Branch, of Illinois, mentioned a case where it was complained that he put bad gold into a plate. On examining it, he found it spotted over with what he considered oxide of mercury. The gentleman said it could not be so unless he (Dr. B.) put it there. On looking into the matter very closely, he finally ascertained that the appearance was caused by a preparation of chalk and mercury, which the patient—a physician—had had on his fingers when handling the plate. Though the preparation was brushed off from his hands, there yet remained enough to discolor the plate; and perhaps the one exhibited was affected in the same way.

Dr. Sylvester in reply to this suggestion, said that one side was entirely covered, and the other entirely free.

Dr. Roberts stated that he had removed a clasp from the mouth of one of his patients, which presented a similar appearance. He found that it was caused by quicksilver that he had used and that had got on his hand at the time of casting it.

Dr. Spaulding, of Dedham, suggested that such effects demonstrated the importance of investigating and understanding the physiological condition of the system. If it was a fact, that a plate inserted into the mouth could extract poison from the system, it was an important fact to be understood by every medical man. If he understood the matter, the second plate was not affected in the same way. It was a matter of importance and interest to their profession, that they should understand well what deposits could be made from the fluids of the mouth, or from anything they could do in the mouth, by the insertion of plates or fillings. If they found that the system was surcharged with mercury, so that it made a deposit upon the plates, means should be used either to relieve the system of this amount of mercury, or correct the secretions of the mouth, so that their plates should not be affected by them.

Dr. Goldey, of Oswego, said that three or four years ago he inserted a plate, on which, at the end of about a year, he found quite a heavy deposit of mercury. He boiled the plate in acid, and removed the deposit without difficulty; he put it in again, and in about a year, found about the same quantity deposited upon it. The patient was not conscious that she had ever taken any mercury, but it was quite evident that she had. She was uncommonly healthy. He had boiled the plate twice, but there was even now a slight coating upon it.

Dr. Dwinelle was then called upon, and addressed the Convention. He said, perhaps there was no department of their art which made it

approximate so much to a divine art as that department which had for its object the regulation of the teeth, and the consequent regulation of the general deformities of the mouth.

One great difficulty in the way of correcting irregularities and deformities of the mouth had been the inability to make fixtures of sufficient strength to answer their purpose, while they were small enough to be practicable. A few years ago, having this in view, he undertook the construction of a new instrument for that purpose. He found an old case of surgical instruments that came, originally, from London, and on the hilt of each instrument was screwed or consolidated a piece of zinc; and he found, on reference to his library, that this was often resorted to to prevent valuable instruments from rusting. He thought of making his instrument of steel, small enough to be practicable, and applying the zinc to prevent rust. His mind at once reverted to the simple screw and nut, or what is familiarly known as the jack-screw. He went to work and made some of these, not over an inch or an inch and a quarter long. This instrument was susceptible of every variety of modification, and could be used at any angle. It would not rust in the mouth enough to injure it, but the zinc ends required renewing occasionally, on account of the waste by galvanic action. He thus had an instrument capable of spreading the mouth almost entirely apart, at the same time that it was not in the way, as other fixtures were. His patients preferred this method of operating to any other which he had adopted. One reason was, that the pressure was firm and altogether in one direction; it did not admit of a vacillating motion, backwards and forwards, which was conducive to undue inflammation; the constant pressure, too, operated to close the bloodvessels, so as to forbid any excessive inflammation. [Dr. D. explained, by diagrams, his method of using the instrument.]

Dr. Clark, of New York, inquired if Dr. D. did not find that the life of the teeth were destroyed?

Dr. D. replied, that they were not. There was sufficient circulation on the other side. With this instrument he had forced the central incisor, in a patient 33 years of age, from a position where it was a serious interference with the articulation, into its proper position in the arch, in five weeks, without any trouble whatever. He had had several cases where the patient was 18, 20, or 25 years old, but he thought this case of 33 years was remarkable. He felt confident that he could succeed in all cases, even at that age, unless the patient was of a scrofulous habit, and then he could modify the difficulty. He

fixed the instrument in its proper position by attaching plates to the teeth, in which he set the points.

Dr. D. then described a very interesting and difficult case which had been under the care of Dr. Dalrymple, of New York City, and which Dr. Perine had previously alluded to. The patient was a young lady, fourteen years of age. At birth she had a hair lip, which deformity had been corrected as far as possible; but as her teeth developed she had no frontal incisors; originally, an elemental or supernumerary tooth came in and occupied the place of all the frontal incisors. The articulation arranged itself in such a manner that the upper were continually embraced by the lower teeth; ultimately, they must have been brought almost in contact. The arch was exceedingly narrow. The two superior cuspid teeth would have been brought entirely together in five years, and any one would see the consequences; the palatine arch must have been closed up, and all the unhappy consequences which would naturally follow would be the result. Dr. Dalrymple, after working a year, succeeded in separating the cuspid teeth so as to get sufficient space for the four frontal teeth; he supplied the lost incisors, and almost entirely corrected the deformity, changing the expression from an unpleasant and almost hideous one to a very pleasant and agreeable one.

Dr. D. exhibited a cast of the mouth taken before the operation, which was certainly sufficiently deformed, and also the cast taken when the work was finished, which looked as if nature had done her best to give the lady a perfect dentition. In conclusion, he expressed the hope that Dr. D. would himself explain the case, for he felt that he had not done him justice. He was entitled to a great deal of credit for the operation, and he, (Dr. Dwinelle,) honored him for it. He knew the difficulties in this comparatively untrodden field; for, with all respect to the past, it was almost entirely a new field.

Dr. Dunning asked Dr. Dwinelle if he found many cases in which the jack-screws were available? He did not see how, in many cases, they could be applied in pushing forward in the right direction.

Dr. D. replied, that it was often necessary to construct an opposing surface, artificially fashioned.

Dr. Roberts inquired what could be done with very young patients, where it was almost impossible to attach any fastenings to the teeth?

Dr. D. said, in that case he made them, and explained on the black-board how he did it. He said he often had to break up the articulation altogether. The patient masticated with the fixture in his mouth. He had moved a tooth half an inch, by actual measurement, in this

way. He straightened out a lady's teeth, which were "confusion worse confounded," in five months' time; in any other way it would have taken a year. Oftentimes the right direction could be given to children's teeth by seeing them two or three times; for the adage, "just as the twig is bent the tree's inclined," never applied more forcibly than in their profession. Simply by the use of a rubber band, or a piece of pine wood, he had corrected the worst kind of deformities. In the case of a child, the teeth often had to be tied in their place after they were got there. Dr. D. said, he did not think it safe to fill teeth before they became fully developed, as there was danger of inflammation; still, it was necessary to do it sometimes, but it should be done with great care.

Dr. Dalrymple, of New York, then explained the operation to which Dr. Dwinelle had referred. His description was substantially the same, but more minute in the details. He said he saw the patient once a week, on an average, for fifteen months, and had every conceivable difficulty to contend against. He consulted Dr. Dwinelle several times, and received many valuable suggestions from him. One very gratifying change, caused by the operation, was the alteration in the appearance of the upper lip. The work was performed with wedges, and he found, at one time, that an inflammation had been excited; but, on reflection, he came to the conclusion that was just what he wanted, as the result proved, for the inflammation he had excited, caused the cartilage of the nose, (which had been drawn down by the operation for the hair-lip,) to relax, and allow the lip to take its natural shape; and the result of the whole was that the patient was now a pretty good looking girl.

Dr. Allport exhibited some models of a case operated upon by Dr. Elisha Tucker, where the upper teeth lapped over a great deal, which had been treated very successfully, and also described an operation of his own, which he said was half as bad again as that. His motto always was "Try!" and he never allowed a case to come to him, however difficult, without at least making an attempt to remedy the evil. The ordinary way of operating in the case to which he referred, would have been to supply elastic ligatures; but the trouble would have been, that the ligatures would slip up and irritate the gums, and he concluded he would not try them. He attached plates to his molar teeth, and by sundry ingenious mechanical contrivances, (which he illustrated on the blackboard,) effected his object. Dr. A. expressed his belief that the principle stated by Dr. Dwinelle was the only correct principle of regulating teeth; the tooth was drawn to its place, and

the bloodvessels had no chance to become injected, consequently, there was no inflammation.

At the request of a member, Dr. A. then gave an account of a case of fracture which had come under his hands. It was that of a gentleman who was thrown from a hack, and kicked by the horse. The blow was upon the left side of the face, and it broke through the whole jaw, so that when the case came to him, the molar teeth occupied the centre of the mouth. The surgeons of the hospital concluded they would rather not undertake it, and finally asked him to see the patient and decide whether he could do anything. The trouble was to get the jaw back to its place and hold it there. He could think of no way without a plate, and the question arose how to get a plate. He found it impossible to take an impression of the whole mouth in the ordinary way, and then tried to take half the mouth; but when he undertook to take off the wax, it tore all to pieces. Finally, after taking the impression, he filled a large syringe with ice water, with which he hardened the wax in the mouth, and then removed it without trouble, and thus got an impression of half the mouth. The other half he did not *take*, but *made*, by the half he had, and struck up a plate which was as the mouth would have been if it had been perfect. He took the plate to the hospital, and, with the assistance of the surgeon, removed considerable bone and some flesh that hung loose, and then pressed the plate into the mouth, and got each tooth into its proper place. He then bound the jaw firmly, and left him. The operation was perfectly successful.

Dr. Dwinelle stated, that some three years ago Dr. Miles told him that he had often regulated cases of deformed teeth in children, when the gums were in a mobile state, on the instant. Having cut about the tooth, he got the bearings on one side and the other; he would take a large forcep and press the tooth back at once. He mentioned this to show how accommodating the animal economy was.

Dr. Clark, of New York, said perhaps some would like to have a simple means of correcting cases that occurred in every day practice. In cases where the tooth turned round, from one-quarter to one-half, he fastened a gold spring round the central incisor, instead of making a plate, as was common.

Dr. J. G. Coates, of Virginia, explained and illustrated, in a very happy manner, his method of operating on deformed mouths. After fitting the plate, he sawed it in two in the centre, and moved the teeth by means of screws attached to the sides. In seven weeks, in the case he described, he had the teeth in perfect form.

Dr. Sanborn, of Andover, remarked that a good deal had been said about preserving the teeth of the young, and perhaps it would not be amiss to mention a very simple method of securing the teeth of old people, which teeth had become loose. He took a small platina wire, drawn for the purpose, and wove it round and between the teeth, then cut the wire off, turned it down, and then the teeth were as firm as ever. He had used this method on the teeth of several old ladies and gentlemen, three, four and five years ago, and they were still firm and doing good service. "In union there is strength."

Dr. Forbes, of St. Louis, exhibited a very simple invention, made by Dr. J. H. Fairbanks, of St. Louis, for cooling wax in the mouth. It seemed admirably adapted to its purpose.

Dr. Roberts explained a method he had adopted to enable him to use the inclined plane to regulate the teeth of children, where it was difficult to get anything to rest solid on the lower jaw. He took an impression of the teeth in gutta percha, which gave a more perfect representation of the points of the lower teeth than was obtained in any other way, and then made a plate of platina.

Prof. Harris, of Baltimore, then stated that, at the request of the Boston committee, he would move that the Convention adjourn at half-past one, and proceed at once to the boat for the excursion in the harbor.

While up, Prof. Harris continued, I must take occasion to express my deep regret at not being able to partake of the hospitalities tendered by our Boston brethren, having just received a letter which makes it necessary for me to return home at once. I regret this the more, knowing the character of our Boston friends, and that they have acquired somewhat of a celebrity, especially for the excellency of their tea parties, (loud applause,) having given one more than eighty years ago, (applause,) and provided a dish so large and so fragrant, that the odor thereof diffused itself through the atmosphere of our whole country, (renewed applause,) inspiring the people of our then infant colonies with such an ardent love of liberty, that they all came up as one man, and broke the chain which had held them for years and years in bondage. (Enthusiastic cheers.) It is, therefore, a source of deep regret to me that I cannot be with them and participate in the festivities of the occasion.

The motion was unanimously adopted.

Prof. Harris then said, at the request of Dr. Allport, he would say a few words by way of caution, in regard to changing the position of a tooth too rapidly. Inflammation of the periosteum and pulp might

be excited, which would terminate in the disorganization of this highly important portion of the tooth. Not long ago, a most interesting and highly accomplished young lady was brought to him by her father, with the view of ascertaining if something could not be done to restore the lost color of a tooth, which had been but recently brought into the dental arch. He at once perceived that the pulp was in a state of disorganization; that the tooth had lost all that portion of its vitality which it derived from the lining membrane; and, on inquiry, he found that the position of the tooth had been changed more than a quarter of an inch, in some five or six days, by the pressure which had been applied to it, for the purpose of bringing it forward to its proper position. It was done by a band of india rubber, assisted by the action of an inclined plane. That this would always occur was by no means probable; on the contrary, he knew it would not; but it was liable to occur in individual cases, where the system was more than ordinarily susceptible to the action of irritants; and in such cases the teeth should be moved much more slowly than when no preternatural excitability of body existed. He wished to caution gentlemen in this matter. He had known the same thing to occur from the action of an inclined plane, when made to act too promptly upon a deviating tooth.

Dr. Forbes, of St. Louis, exhibited and explained an impression plate, the invention of Dr. Fairbanks, of that city, which attracted a good deal of attention.

Dr. Branch, of Illinois, exhibited his invention for producing local anæsthesia. He said some complaint had been made with regard to its operation; that he thought that was occasioned by the operator not understanding the proper method of applying it. He had found it a perfect substitute for chloroform, in those cases where he felt a desire to use chloroform. It was harmless in all cases where chloroform was most objectionable. He did not mean to say that it could be profitably used in all cases, but that it was of so much benefit that no dentist could afford to do without it. It was now in use in general surgery as a remedial and anæsthetic agent.

Dr. Dwinelle called on Dr. Wetherbee, of Boston, to state his method of preparing the mouth for the reception of an entire dentition.

Dr. Wetherbee said that he had ever regarded the preparation of the mouth for the reception of artificial teeth as of great importance. In a very few words he would describe the mode he adopted some nine years ago, and which he pursued at the present time. Dr. W. then described his process, the peculiarity of which was, that in preparing his temporary plate, he allowed for the probable shrinkage of the

gums. In some cases he attached springs to be worn until the plate adhered. The result was, that at the end of the year, the plate set as well as the permanent plate would, the mouth was smooth, and when he introduced his permanent plate, it set very firmly indeed.

Dr. Austin, of Manchester, N. H., described a new invention for the application of cold air, to secure local anæsthesia. It consists of two or three cans, placed one within the other, the inner can being filled with ice and salt, and a pipe conveying the air to the mouth, which was forced up by an ordinary pair of bellows, worked by the foot, or in any other way.

Dr. Branch asked why it was called an invention for securing *local* anæsthesia.

Dr. Austin replied, that as soon as the air ceased to be local, the other air mingled with it and moderated its temperature.

On motion of Dr. Rogers, the discussion of miscellaneous subjects was suspended, to hear reports from committees.

Dr. Dwinelle, from the Committee on Printing, appointed last year, presented a report, which was accepted.

The same gentleman reported from the committee to whom was referred the communication on plastic gold, received a few days since from Dr. Weiber, of Paris, that the gold was about the same as manufactured in this country some six years ago, and rejected as not adapted to the wants of the profession. They recommend the Convention to confer an honorary degree upon Dr. Weiber, and to send him samples of gold manufactured in this country at the present time.

The report was accepted and adopted.

Dr. Dwinelle now made some remarks *strongly* condemnatory of the course pursued by a Mr. Gilbert in patenting an improvement known by the name of the "Central Cavity Plate," and which he said had been used by the profession long prior to the date of said patent, also stating that one of their members, Dr. Potter, of Norwich, had been sued by said Gilbert for a violation of the patent, and that he thought an expression from the Convention of sympathy and aid to Dr. Potter was proper and just.

After some remarks from other gentlemen, fully endorsing the views advanced by Dr. D., resolutions expressing sympathy and offering aid to Dr. Potter were offered and carried with great unanimity and applause, but which, on subsequent action, was re-considered and laid upon the table, in consequence of the opinion prevailing that their action would lessen the weight of their evidence, as parties interested, in case any should be called upon as witnesses in the suit now pending.

Prof. Taft, in behalf of the Committee to whom was referred the essay by Dr. Westcott, stated, that in glancing over it hastily, they noticed that it was upon a subject which had not come before the Convention, and probably would not, and as it was predicated on the supposition that the subject would be introduced, that under these circumstances, they did not deem it important that the paper should be read to the meeting. The report was accepted.

Dr. Locke, of Nashua, said he had prepared some resolutions which he desired to present to the Convention, and which, if there was not time to act upon them at the present session, he hoped would be permitted to appear among its proceedings :

Whereas, We deplore, as much as the public can, the physical degeneracy of the human race in so-called civilized society, as manifest to the physician, in the enfeebled constitutions and the diminished stature, as to the dentists, in the narrowly contracted maxillares, and in the imperfectly developed dentures, which renders them the most irregular and defective in parts of speech known in the English language :—therefore,

Resolved, That in the opinion of this Convention the causes of imperfectly developed and defective teeth arise, first, from the violation of the physiological laws in the formation of the marriage union ; second, from the want of a sufficient supply in our diet of the chemical elements which are needed to form *bone* ; third, by too free use of acids in our food and drink ; fourth, mainly from acetic acid, formed by fermentation in the chemical laboratory of the mouth and stomach from sugar, and saccharine matter in all its forms, and from most articles of food, when more is taken than is digested.

Resolved, That the remedies we now know of are, first, cleanliness of the teeth and mouth ; and second, a temperate use of the coarser and more substantial articles of food.

On motion of Dr. Spaulding, the resolutions were laid on the table, to become a part of the proceedings of the Convention.

On motion of Dr. Straw, of Bangor, it was voted that when the Convention adjourn, it be until to-morrow morning, at 9 o'clock.

[The Convention then, at half-past one, adjourned, and proceeded in a body to the steamboat which had been procured by the dentists of Boston and vicinity for the purpose of an excursion down the Bay. On the boat was found a band of music and a very liberal supply of refreshments, which was partaken of with keen appetites. During the trip down many speeches were made, and we are compelled to add, many stomachs relieved in consequence of—not the speeches or the

clam chowder—but from a very peculiarly undulatory movement of the water. Notwithstanding these interruptions the boat reached “Nahant,” (where, it will be remembered, the “Sea Serpent” is occasionally seen,) when, after a sojourn of some two hours, the party again embarked and made their way slowly up the Bay, touching at Hull, where a very *spirited* entertainment was given by one of the gentlemen of the reception committee, Dr. E. G. Tucker, of Boston. The boat was again manned, and on the way up to Boston speeches were again in vogue, and “all the world and the rest of mankind” were called out. At 10 o’clock, P. M., Boston was reached, and the festivities terminated.]—*Ed. Dent. News Letter*.

FOURTH DAY—MORNING SESSION.

The Convention was called to order at a quarter past 9. The Secretary being absent, Dr. Forbes, of St. Louis, was appointed Secretary *pro tem*.

On motion of Dr. Taft, the reading of the minutes was dispensed with. The same gentleman then moved a reconsideration of the vote whereby the Convention voted to lay the consideration of miscellaneous business on the table, and the motion was carried.

MISCELLANEOUS BUSINESS.

Dr. Simonds, of Boston, addressed the Convention on the subject of extracting teeth. He said he had some experience in this branch of practice, and for the last six years, he had made it a rule to extract as many as it was necessary to take out, at one sitting. He had generally found that when he succeeded in clearing the mouth from carious teeth at one time, the patient got along better, and did not seem so much debilitated, as when the operations have continued from day to day until the mouth was cleared. He had extracted the full dentition, thirty-two teeth in one instance, at one time, and the patient got along without being sick. Frequently he extracted twenty or more at one sitting, and never had had any bad consequences follow these operations. This was an operation, he conceived, which required a great deal more skill and judgment, than many were willing to admit. He thought it unwise to attempt to deceive the patient; if he wanted to see the instruments, let him do so; make the operation appear as bad as possible to his mind, and then when it was over, he would be likely to say it was not half so bad as he expected.

Dr. Taft called upon Dr. Blakesley to address the Convention.

Dr. B. said, it seemed to him, that there was a definite way of getting at the matter of diseased teeth, and the remedy; and the

thought had occurred to him, that it would be well for the Convention to institute a fund and employ one or more competent persons, whose time should be occupied in the analysis of the various grains and vegetables in their natural state, and after they were cooked, and see how the system is affected by them. He was sorry to say, he did not know what a grain of wheat or corn, or a potato, contained; he wished he did; but he had no time to analyze them for himself, and wanted all this matter put into such a condensed shape, that in a few minutes he could ascertain all he wished to know. He was willing to be taxed from ten to fifty dollars a year to promote an object of this kind. (Applause.)

Dr. McElroy, of New York, recommended Dr. Johnson's "Chemistry of Common Life," as containing all the information desired on this subject.

Dr. Taft, of Cincinnati, said this was a subject in which he had been very much interested, but it was only by accident that he ascertained that the thoughts of Dr. Blakesley and himself had been running in the same channel upon it. Every one could see the propriety of this, and the beneficial results that would accrue to the whole profession if Dr. B's suggestion was carried out. If he understood the idea, it was, that their society should raise a fund to sustain an experimenter for the benefit of dental science. They all had very many things coming under their observation, about which they were uncertain, and they resolved, at some time or other, to institute experiments, and find out the truth; but that time never came. Take, for instance, decayed teeth. Did not the discussions of the last three days show that there was no fixed opinion with regard to the cause? Yet it could be ascertained; there was no doubt about it. The nature and cause of decay could be brought out, and based upon facts, so that they could all understand them, if some one would take hold of the subject, and work away at it until he had attained the truth of the matter. How many other things there were, about which there was the same uncertainty! If this fund was raised, when such cases occurred, they could refer them to their scientific experimenter, and ask him to investigate them, and find out what was in them. Every one would see how a hundred good objects would be subserved by this.

With this object in view, Dr. Taft said he had drawn up a series of resolutions, which he thought covered Dr. Blakesley's idea. He read the first, as follows:—

Resolved, That this Convention establish a fund for the promotion of Dental Science, with especial reference to the employment of some

competent person or persons, to conduct experiments—physiological, pathological, chemical and hygienic—as connected with dental science.

Dr. Taft said, that by the appointment of this agent, they would all obtain more than any one, even under the most favorable circumstances, could. The position he occupied would give him the command of resources, which no individual under other circumstances could command, for he could call in the aid of eminent chemists and other scientific men, all over this country and in Europe, who would be willing to lay everything they had at his service. Then the results could be published through whatever medium they desired.

Dr. Blakesley wanted this Convention to have the merit of originating this movement, carry it on in their own way, and publish the results in their own way.

Dr. Branch desired to second the motion, and back up with all the power he had what Dr. Taft had said on the subject. He presumed he had one hundred things in connection with his profession which he desired to investigate, but he could never find time to do it; and although he found these things treated of in books in a general way, he did not have them treated of in reference to his profession. They would save themselves and patients any amount of imposition, if this plan was carried out. They needed to have some one in their employ, whose decision in such matters would be authority—upon whose opinion, with regard to the action of certain kinds of nutriment upon the constitution and the teeth and kindred subjects, they could rely. He believed this was just what they wanted, and, as has been said on another and greater occasion, “he gave his hand and his heart to this vote.”

Dr. Lord, of New York, remarked, that with all due respect to the gentleman who had introduced this resolution, and to those who had advocated it, he could not see the propriety of it. If this society had been instituted twenty-five or thirty years ago, then such a course would have been much more consistent and proper, but now the field had been gone over, the science of chemistry had been very fully developed with reference to every branch of art.

Dr. Buckingham, of Philadelphia, opposed the resolution. He wanted one society in the country, where every man could come in and speak his thoughts, and when he went away, profit by what he had learned. He was afraid the plan proposed, if carried out, would restrict the freedom of the Convention.

Dr. Straw, of Bangor, suggested that it was easier to pass resolutions than to raise funds. He should like to know how they could

raise a fund. They had no organization by which they could assess their members, and it seemed to him, that it was not proper to pass the resolution until they knew they could raise a fund in some way or other.

Dr. Kendrick, of Mississippi, favored the resolution, as a matter in which they could all take pride. He had often been gratified by hearing persons say, when speaking of dentistry, "Why, really, your profession is getting to be a scientific one." He did not consider it necessary that they should be an organized body in order to secure this object. There were thousands of dentists scattered through the country, who would be glad to contribute something to this end. It had been suggested, that men might come there and present their views, but it must be remembered that some of their ablest men were the poorest—their mind was their only capital—and they could not afford to suspend their business, and come and think for them. If they did so, it was no more than right that they should be paid for it. Dr. K. suggested that a circular should be sent to every dentist in the country, stating what they wanted to do, and requesting him to enclose a gold dollar or more, in a letter to the Secretary, in furtherance of the object.

Dr. Taft said there would be no difficulty in raising funds, if they decided to do it. They could easily find ten men who would give from ten to one hundred dollars a year. He hoped they would begin now, and they would have at the end of a year, one hundred results—for which he was willing to pay one hundred dollars—by which they could all profit. He was astonished that any man should think that the science of chemistry was now perfected, and had reached its culminating point, especially, when they came to bring chemistry to bear upon their profession, and saw how little was known upon the subject, and began to open their eyes to the fact that they knew nothing at all. (Loud applause.) If any man knew all about it, let him tell it.

Dr. Dalrymple stated that Dr. Westcott, of Syracuse, one of their own members, was now preparing a work to show the different effects of the different kinds of food and condiments upon the teeth, and in the course of time they would see that work published to the world. It was to be in a condensed form, that every man could have it in his library.

Dr. Allport spoke in favor of acting upon the matter now. If they suffered it to lie over until next year, they would lose the benefit of one year's experiments. That was no small item; for every deter-

mined fact in their profession, not only accrued to their advantage, but increased the respect in which they were held by the community.

He wanted a man who would take hold of one particular thing, and devote his entire time to it, and was willing to pay his share of the expense. Then, if they found anything they wanted analyzed, let them put it into the hands of their analytical chemist, and let him investigate it and give his opinion upon it. He would not say they should sanction that opinion, but let him give them the result of his knowledge and experience, and they could judge whether it was sound or not. There were a great many chemists scattered over the country, most of them good, but their investigations did not point directly to the dental profession. They wanted to make a dental profession mark in this business, and the only way to do it was in the manner proposed by the resolutions.

Dr. Newton, of Worcester, thought they needed information on subjects that went behind those matters which were commonly supposed to comprise the whole of their profession. He desired, particularly, to see the physiological department of dentistry investigated. Fathers and mothers often came to them and asked what they should do to give their children sound and healthy teeth. He confessed that he did not feel competent to counsel what should be done, and he feared many of his professional brethren were not. Until they learned these laws,—laws of life as well as of science,—they could not attain that high standard at which they all aimed.

Dr. Buckingham explained that in the remarks he had offered, he did not object to the appointment of the Committee because he was opposed to the end sought to be gained, but because he thought it ought not to be brought into such a Convention as this. He had given as much money to advance his profession as his brethren, and he was willing to give, but he thought this was not the place for the introduction of the subject.

Dr. J. A. Perkins, of Rome, N. Y., said that he had long felt the need of something of the kind now proposed, and he hoped it would pass. If it did not bring in all it cost, he should be very much mistaken.

Dr. Fuller, of Portsmouth, N. H., desired to say a single word in favor of the resolution so ably advocated by Dr. Taft and other gentlemen. He would say, that although he was delighted to hear that Dr. Westcott had such a work in preparation, as had been alluded to, he still could not conceive of such a work, were it published to-day, as likely to benefit them in the investigations and discoveries that might take

place before their next meeting, or in all coming time. He thought they could afford to employ a competent man, who had the ability to do the work, and he was in favor of starting the thing to-day, so that by next year they might have some report.

The question was then loudly called for, and being put, the resolution was declared adopted, there being but few dissenting voices.

Dr. Taft then offered the following resolution :

Resolved, That a Supervisory Committee of three from the profession in the United States, be appointed, whose duty it shall be to take charge of the whole matter, which Committee shall have its Chairman, Secretary and Treasurer ; and it shall also be the duty of said Committee to secure the services of some competent person or persons, as experimenters, to commence their labors as soon as possible, and that the results of such labors shall be given to the profession as soon as obtained.

Drs. Allport, Taft, and Chandler, of Pennsylvania, spoke briefly in favor of the resolution. The last named gentleman said he was delighted with the proposition, for he thought it was the key by which they could arrive at the truth of certain questions which had been discussed in the Convention. He had become convinced that the destruction of the teeth was occasioned by the diseased condition of the saliva of the mouth ; and by the analysis, by the experimenter it was proposed to appoint, of the alkalies and acids introduced into the mouth, they might arrive at the truth of the matter.

The question was then taken on the resolution, and it was adopted.

Dr. Taft then introduced the concluding resolution of his series, as follows :

Resolved, That such person be placed in the most favorable position, by the profession of the United States, for carrying out the objects of the previous resolution.

Dr. Taft said the object of the resolution was to pledge their influence and support to the gentleman who should be appointed to carry on these experiments, by aiding him in every way in their power. It was not contemplated that they should cease their experiments and investigations, but continue them as assiduously as possible, and give him such aid as they could.

The resolution was then adopted.

The President then announced the following gentlemen as the Committee to prepare business for the next session of the Convention :

Drs. Jonathan Taft, Cincinnati, Ohio ; Chapin A. Harris, Baltimore, Md. ; C. W. Spaulding, St. Louis, Mo. ; Benjamin Lord, New York City ; Elisha Townsend, Philadelphia.

On motion of Dr. Buckingham, the thanks of the Convention were voted to the dentists of Boston, for the courtesies which had been extended to the members, and for the excursion down the harbor yesterday afternoon.

Dr. Clark, of New York, addressed the Convention on the subject of tempering instruments. He said that one of the greatest difficulties he had realized, in thirty-five years of practice, was that of securing instruments of the proper temper, for the various operations they were called upon to perform. The instrument makers declared that no two dentists could agree upon this subject, and they therefore made their instruments for those who seemed to require the greatest number. The great trouble was, that dentists were in the habit of having their instruments almost all of the same temper. He had been in the habit, for a great many years, of making instruments of different tempers, and he would state what tempers he thought best. Every one, he presumed, knew, that if a piece of steel was heated red hot, and plunged into any cold body, it would be perfectly hard. It must not, under any circumstances, be overheated. A cherry red, or a little lighter than that, would be sufficiently hot to produce hardness. That temper they wanted for their files and chisels, with which they intended to chip off the enamel, for their burrs, with which they intended to cut the enamel, and for their scrapers, which they used on the outside of the teeth. That was all, he believed, they required hard instruments for. For excavators or scalers, after brightening the instrument which has been hardened, the temper should be drawn by carefully heating it, until it assumed a tolerably bright straw color. This could be used for cutting bone, brass, gold, or soft iron, or anything except hard steel. In addition to that, they wanted instruments much softer, for strength. Pluggers required great strength—they did not want them to alter their shape. The greatest strength was found in the true spring temper, perhaps a little harder than was used for carriage springs. This was obtained in small instruments, by carefully drawing the temper beyond the straw color, till it became a blue, and a little dirty in its blue—changed a little toward white, as if it was burning off its color; then they had a strong spring temper. This, Dr. Clark said, was an important matter, for all dentists were obliged to temper their own instruments, as they could not rely upon the instrument makers; and in this matter, he found a greater variety of opinion than in any other. If the steel had been burned, they might throw it away, for it could not be restored.

Dr. Straw, of Bangor, said he was glad to hear the gentleman from

New York speak of instruments, because it was a matter that ought to be understood. The method he adopted to secure the proper temper for *small* scrapers, was to heat them just right, and swing them in the air very rapidly. It was not necessary to draw the temper at all; this gave the best edge they could possibly have. It would not answer for *large* scrapers, however; they became too soft.

Dr. Randall, of Farmington, Maine, said that he was so situated, that he could not obtain instruments of a suitable temper, and had been compelled to manufacture them himself. After heating, as the gentleman from New York described, he plunged the instruments suddenly into a mercury bath, which produced the best temper.

Dr. Clark.—Is it not very hard?

Dr. Randall.—It is.

Dr. Clark.—Then it would be too hard for some purposes.

Dr. Priest, of Utica, remarked that a great deal of steel was spoiled by over-heating. To avoid this difficulty, instead of heating the steel with the lamp and blow-pipe, he heated a pair of tongs, and placed the small tools in them; in this way, there was no danger.

Dr. Clark.—I thank you for that information.

Dr. Lord, of New York, said he had found that one of the greatest difficulties in the way of success in dentistry, was the want of suitable instruments. The instrument makers did not understand their wants; the instruments they manufactured were those they *supposed* dentists wanted. He supposed a great many went to the instrument makers to procure their instruments, expecting them to be what they wanted; but they soon found their mistake, and that they must learn to make instruments for themselves, which he considered imperative for success. He thought one of the first things was to learn to make instruments, and adapt them to the peculiarities of a particular case. They did not need so many instruments, but they ought to be able to make them to hand, and they often were made thus, on an oil stone, or with a file, or with pliers, at any moment. He used an instrument with very little temper, for placing his foil; he wanted an instrument that would spring. He did not want it to bend, but he had rather it would bend and stay bent, than be rigid.

Dr. Straw said he had ascertained that it was necessary to hammer the point of an instrument before bending it—flattening the point upon two sides.

Dr. Miller said he wanted his light properly arranged, and then, with a good blow-pipe, he could do the work well. He did not heat the whole instrument red hot, only the cutting part. He heated it to

a proper red and plunged it into soap or oil, and reduced it to a straw color. He could not buy such instruments.

Dr. Branch remarked that he learned from a watchmaker how to temper drills. He did it by holding a fine drill in the flame of a candle until it was properly heated, when he took it out and plunged it into the body of the candle. He used a sperm or stearine candle, which he thought preferable to a soft one. He believed he got a better cutting drill in that way than any other.

Dr. Clark said, that was the best temper for cutting steel, but he would not try it on brass.

Dr. Allport said that he was lately in the office of Dr. Rich, of New York, and he (Dr. R.) showed him his plan of bending instruments. He had adopted a system so that he always knew the exact curve of his instrument, and was never mistaken about it. Dr. Hawes, who was present, could explain the process better than he could, and he would ask him to do so.

Dr. Hawes said: In the first place they wanted an anvil on which to shape their instruments. Purchase a hammer and make an anvil of it by inserting it in a base. Draw the temper, and make some half dozen angles on the anvil, one at 20, 30, 40 or 50 degrees, as they wanted the angles of their instruments; then, with a die, number the angles 1, 2, 3, and so on. Then, when that is complete, and the angles made perfect, and the anvil brought to a proper polish and finish, they would temper it again. Then, in order to shape their instruments to a proper angle, they had nothing to do but to lay them on the anvil, hit them one little tap with a hammer and the thing was done. Then take a die and mark the instruments No. 1, 2, 3, and so on, to correspond with the numbers on the anvil, and they knew just what instrument they took up, and if it was too straight or too much curved, they could instantly, by referring to the number, know the exact instrument necessary for their purpose.

Dr. Buckingham remarked that he had adopted a very simple process for drawing the temper of steel. He took a piece of gas pipe or an iron tube, say a quarter of an inch in diameter, filled it with charcoal, and put the point of the instrument in this, then laid it upon a piece of charcoal and heat it to a red heat. There was no danger of injuring the steel in this way; it was almost as pliable as iron wire, and could be bent at will. To get the proper temper, he had used various substances, but common brown soap was as good as anything. He heat the instrument up, put it into the soap, and then heat up again—the soap would hold the heat—and then plunged it into some cold

substances. This protected the steel from oxydization. With small instruments he put the point against a piece of steel, let the flame come up, and then, when he got the color he wanted, plunged it into water.

Dr. Clark said he had invariably found that if he heated his steel and cooled it, no matter how, it was always perfectly hard. He could not see any appreciable difference between water, oil or soap. It was sometimes troublesome to get instruments clean, but they could be cleaned in sulphuric acid. Early in life, before he thought of dentistry, he was told that if he wanted to keep a piece of steel handsome after it was hardened, he must envelop it in soap, which would clean off and leave the steel perfectly bright.

Dr. Leach said he was trained as a blacksmith, and he was proud of his early training. [Applause.] He had worked months and months on nothing but steel, and knew something about it. If they took a piece of steel, and made a slight mark across it with a coarse file, they took from its strength more than they would if they cut down the whole instrument to that size; the whole spring was brought over one point. Hence it was important that every instrument should have as polished and smooth a surface as possible, and that the angle should not be too abruptly turned; an angle turned with a perfect corner was not so strong as one that had a slight curve. In forming steel into instruments, as true a taper should be carried back from the cutting point into the socket or handle as possible, so that the strain will become gradual all along down to the point. If a shoulder was cut down to get a small size, the spring closed at that point, and a strain wrenched it off.

Dr. L. thought the best method of getting a spring temper had not been described. After getting the steel to a proper hardness, as they would for a cutting instrument, if they wished to get a low spring temper, put upon it common wax and hold it till that burns off, and the flame ceases. If a higher temper was desired, use sperm oil, which burns a little quicker; and if a still higher temper, sweet oil, and the moment the blaze ceases plunge it into water. In getting a spring temper, it was important that every part of the metal should be alike heated in drawing the temper, for if there was any one part more heated than another, the part not so much heated would break suddenly, because that would not yield while the other would.

Dr. Forbes, of St. Louis, said he had been convinced by the remarks on the subject of tempering steel, of the propriety of appointing an analytical chemist. Not a word had been said about the chemical properties of steel; why overheating steel destroyed it; what

effect heating cast steel over a cherry red had upon it; why cast steel alone was destroyed by overheating, while German steel could be heated to a white heat, and plunged into water without being spoiled. There was only one method of properly tempering steel, if they all understood the effects of heat and cold? How was iron changed to steel? By carbon being incorporated into its pores. Why was steel made hard by heating and plunging it into oil, etc.? By the additional incorporation of carbon. The pores of the steel being opened by heat, the carbon is taken up, and the heat being suddenly checked, it was held there. Then, by opening the pores of the steel, and suffering the carbon to escape, they got just the proper temper. If this was well understood, they would all get just such instruments as they wanted.

Dr. Branch, of Illinois, then submitted the following resolution:—

Resolved, That the Supervisory Committee, be requested to invite all members of the profession throughout the United States to participate in this movement, by contributing one dollar or more to the furtherance of the object.

Dr. Branch briefly advocated his resolution. This was a Democratic Convention, and the work was a Democratic work, and he wished every member of the profession to have the opportunity of contributing to the object. He thought the day would come, when they would be proud of being engaged in this work, and posterity would bless them for it.

Dr. Kendrick, of Mississippi, submitted the following as a substitute for the resolution of Dr. Branch:—

Resolved, That the Committee of Dental Investigation, be requested to invite all members of the Dental Profession in the United States, to contribute one dollar or more, together with any facts in their possession, calculated to further the objects of this movement.

Dr. Branch accepted the substitute, and it was adopted.

The President then announced the Supervisory Committee, as follows:—Drs. Blakesley, of Utica, Taft, of Cincinnati, and Buckingham, of Philadelphia.

A motion to adjourn *sine die* was then made, but was not at once put.

Dr. Fuller, of Portsmouth, said he desired, in a few words, to recommend the use of atmospheric plates for the insertion of a few teeth or a single tooth. He had employed them exclusively for two years, in every case where it was possible to do so, they gave the patient sufficient strength to masticate, and he was every way satisfied with the result.

Dr. Straw, of Bangor, gave an account of his manner of swedging plates. After cutting his male die, he imbedded it in sand, packing it down snugly as high as the labial edge; he then made his female die upon that; consequently, he got nothing but the central portion of the plate. He then put on his plate and struck it down, striking nothing but the centre, which goes down in two minutes. He then made another cast in the common way, and carried down the edges, previously, however, slitting the front part of the plate. He, also, if he found a prominence of the labial ridge, near the cuspids or bicuspid on either side, slit that, and carried the edges down; in two minutes more it was all done.

Dr. Ostrander explained an alcoholic lamp which he used, having a double tube, one of which is movable, to slide in or out. He slipped the slide inside the tube, covered it up, and the wick never clogged.

Dr. Fowler, of Yarmouth, Mass., explained a new blow-pipe, invented by Dr. Lawrence, of Lowell, which he said was exceedingly simple and very cheap.

Dr. Allen, of New York, expressed his regret that the subject of artificial dentistry had not been brought up. It was an important branch of the profession, and one well entitled to their consideration. He hoped that a place would be assigned for it in the discussions next year, and that it would not be set aside.

Dr. Coates, of Virginia, explained his method of restoring gold. He had been in the habit of using the gold made by Jones, White & McCurdy, and it did not matter how far it had traveled, or how much it had been crumbled and knocked about, he brought it back to the same condition in which it left the hands of the maker. He had a little platina pan, about the size of a seidlitz powder box, or a sheet of gold foil, which was set in a frame over a spirit lamp, with sufficient heat to boil it full of water in a very few moments. Ascertaining what quantity of gold would be required, he took the requisite number of leaves and immersed them in this bath of boiling rain-water, in which had been put about 40 drops of sulphuric acid. On removing them from the bath they would dry instantly. If it was examined by a microscope it would be found to have a pure and clean surface. They would find it work as well as any gold could. He dipped it into the solution in the rough condition. If examined carefully by the microscope before putting in the bath, it would be found that it had become filled with all sorts of foreign substances; and that was one reason why it was so difficult to make it adhesive. The annealing process did not take off all this foreign matter, but the bath did.

In answer to an inquiry, Dr. Coates said, that he put in only just so much as he intended to use at the time, for he held that the gold would receive impurities from the atmosphere. (Applause.)

Dr. Forbes offered the following resolution, which was unanimously adopted :

Resolved, That the thanks of this Convention be presented to the Reporters, for the able and impartial manner in which they have reported the proceedings of this Convention.

The Secretary *pro tem.* then read his minutes of the forenoon's proceedings, which were approved.

Dr. Wetherbee, of Boston, explained his method of inserting teeth upon healthy stumps. Instead of inserting the wooden pivot directly into the stump he filled part way down with gold, and inserted the pivot into that. In this way he preserved the stump in a healthy condition, as no moisture could possibly enter. Stumps treated in this manner would last for a great number of years. Sometimes he used a metallic cylinder, which was surrounded by gold, and thus avoided the use of wood entirely.

Dr. Forbes remarked that he was conscientiously opposed to pulling teeth. In some cases he forced a piece of gold wire down to the apex of the tooth, and left it there; then filled up the fang with fibrous asbestos, and the crown with gold. His operations in this way had been successful.

Dr. Newton recommended the use of nitrate of silver for cleaning out the fangs of teeth.

Dr. Miller stated, that on one occasion he was called upon to insert a plate in the mouth of a young girl 16 years old, and the mouth being very small, she was unable to retain it. The thought occurred to him that he would cut the frænum labiorum, and see what effect that would have. He raised the upper lip, took up a pair of scissors, and cut it the depth of a quarter of an inch. It was done very quickly. He found also some difficulty with the buccal muscles, and, raising the cheek, cut them in the same way. After the operation was performed, he placed the plate in her mouth, and it adhered quite firmly. By way of experiment he attached a weight to it, and found it would hold four pounds six ounces. He had performed this operation since, a number of times, and had never had any trouble. The incisions might bleed freely, but that could be stopped by the application of tannin or some other remedy. Dr. M., in reply to a question with regard to the safety of this operation, said he believed it was perfectly safe, but he should not resort to it unless obliged to.

Dr. Asay said he had found the same operation assist him very much indeed ; but he thought it necessary to use a great deal of caution, and not cut too much. He had seen it have a very injurious effect upon a patient.

Dr. Miller remarked that he had never seen such a case.

The business of the Convention having been finished, the President, Prof. Taylor, rose, and spoke as follows :

GENTLEMEN.—We are now about to separate. We have had—at least, it has seemed so to me—very interesting and instructive sessions. But I really feel—and I think it is borne out by the discussions of this morning—that we do not allow members sufficient time for these annual convocations ; that we come here unprepared in our arrangements to spend such a length of time as we find that the business of the Convention demands. Indeed, you have brought to my mind this morning, the old maxim, that we are *wedded* to our profession ; and I have felt, whilst listening to the remarks that have been made, even since the motion was offered to adjourn *sine die*, that you would linger as the lover lingers with his sweetheart, after the parting kiss has been given, returning again and again. [Loud applause.]

My object in speaking at the present time, is, merely to say to you, that when we see you in the Queen of the West,—and I hope, gentlemen, (may that hope be realized!) that we shall see each and all of you, and not only you, but your friends and better-halves,—we shall give you a cordial greeting. Our city is large ; the beautiful Ohio meanders close to our borders ; we have every means for your accommodation and pleasure ; and in behalf of my professional brethren of the West, I take this opportunity to say, we pledge you a hearty welcome. [Loud applause.]

The Convention then, at five minutes to 1 o'clock, P. M., adjourned *sine die*.

For the Dental News Letter.

“ADVICE TO THOSE WHO USE AMALGAM.”

BY ELISHA TOWNSEND.

Never fill a tooth with amalgam, or any other “sucedaneum” which you can, by the exercise of skill and care, fill with gold.

If you determine that the crown of a tooth (the nerve or nerves of which are exposed) is too frail to bear filling with gold in a solid and proper manner, destroy the nerves with arsenious acid, and having thoroughly removed them, fill the fangs carefully with gold. Upon

this you may build a crown of amalgam, with a reasonable hope of its being serviceable.

In all teeth liable to be attacked by periosteal inflammation, the proper plan will be, to treat the fangs and fill them with gold, prior to any attempt to fill the crown with anything. When the fangs are well filled, and a few days have elapsed without inflammation, the crown cavity may be filled as safely with amalgam as with gold, so far as periostitis is concerned.

The use of amalgam in the practice of a skillful and dexterous manipulator will be very limited; still, there are cases which occur in every man's practice, where he cannot use gold or any material which requires force to make it pack, and yet it may be very desirable to save the tooth for purposes of mastication. In such cases I deem it the duty of every honest dentist to use such material as he thinks will make the organ useful for the longest period.

If the operator decides upon using amalgam, and thinks his patient might object to it, from the odium which has heretofore been heaped upon it, it is then his plain duty to explain to him the nature of the material, the objections which have been made to it, with his views of the worth of those objections; and then, let the decision for it or against it rest with the patient, either to fill it with amalgam or extract it.

Never allow any one to say he was deceived by the use of an article in his teeth, which, if he had known the nature of, should not have been put there.

In using amalgam as a filling for any cavity, always remember, that to expect success, you must take the same amount and kind of care in forming your cavity, and the same care in keeping it dry while packing it, as in a filling of gold—and also, that the more friction you can give the surfaces with the burnisher, the more compact and well will your filling harden, and bear a higher polish when hard.

I wish it to be fully understood, that I advocate amalgam fillings in the practice of those who can receive liberal compensation for time and skill, only in such cases as would otherwise have to be extracted. I have seen hundreds of mouths in which amalgam fillings have been placed, some recently, and several others years since, and have never, in any case, seen any injurious systemic effect.

There may be, and no doubt there are, thousands of teeth extracted and lost, in the practice of those who are obliged to operate for very low fees, (as in country towns and villages,) which might be rendered serviceable for many years, by the use of a cheap material.

Dental services are now demanded by all classes of people, and there are comparatively few who can afford to pay from 30 to 50 dollars for a fancy operation, such as building up of a gold crown, and for such cases provision ought to be made.

For the Dental News Letter.

NEW METHOD OF PLATING.

GENTLEMEN :—Permit me, through your Journal, to communicate to the profession a discovery that I have made for plating silver, copper or brass with gold foil of any thickness. This may have been used before—if so, I have no knowledge of it, neither can I learn that it has by any dentist.

I will commence on a silver set of teeth, all finished up ready for the mouth ; I will suppose that you want to plate them with fine gold foil, with from three to ten thicknesses of No. 6, or No. 8 foil. I have not tried any thicker.

I first free my plate from all grease. The next thing, I take my foil, cut it up in strips from half to one inch square, or in any shape you may wish ; after getting my foil all ready I take a small buckskin bag, containing about half an ounce of quicksilver, and gently strike it on the side of the plate you first wish to gild. I then rub it all over the plate with my finger on a piece of buckskin, or canton flannel will do, until it is perfectly silvered over ; be careful to have it cover all small indentations. No more mercury is required than to give it the mirror appearance. As soon as that is done, take a pair of tweezers and commence laying on the pieces of foil, until you have the side all covered as perfect as you can ; press each piece down with your finger or buckskin as you go along. When you have finished one coat, rub it down hard until it assumes the same appearance as at first, then put on another coat, and keep doing so until you have as many thicknesses as you want, being careful to rub each coat down well, or when heated it will blister. When one side is finished, turn over and serve the other side the same until you have all the foil on you want.

It is better not to put mercury on but one side at a time, on account of the mercury acting on the plate while you are plating the other side. When you have finished this process the mercury is to be drawn off by heat. This I do, by having a little oven of sheet-iron, about the size of a pint cup, with a cover, having a false bottom of wire, to prevent the teeth from setting on the bottom of the oven. This small oven I set on legs raised about six inches. In this cup I place my plating, and apply my alcohol lamp underneath. Let this remain

from ten to twenty minutes, or more if you wish, for the longer you let the heat remain the richer the color of the gold. Remove the cover and you will see the finest piece of gold plating you ever saw. When cool, if you find any places not covered, apply more mercury on the place, and add more foil and heat again.

When you are satisfied with the amount of foil, and have driven off all the mercury, you can burnish with a blood-stone or steel burnisher, not at first bearing on very hard. Burnish and finish to your own taste. When this plating is properly done, you can melt the plate before the plating will be removed. Soldering on a tooth has no effect on it.

By this process you can make a set of teeth of 14 karat gold, soldered with silver solder, and then plate them *well*, and no dentist can tell them from the finest gold; of course, it will not corrode in the mouth, and will not wear off, neither can you remove it only by the file. It takes me about an hour to plate a full set with four thicknesses of foil.

Yours,

N. B. SLAYTON.

Madison, Ind.

THE DENTAL NEWS LETTER.

OCTOBER, 1857.

EXTRACTING TEETH.

We have received a communication from Dr. Curlee, of Florida, asking us to say something upon the subject of extracting teeth, as he regards it as a neglected subject. He believes there is a great deal of *injudicious extraction*, as well as *premature*.

As regards premature extractions, we have said more perhaps than any other writer, and what we have said, has been fearless and candid, although it was in conflict with some of the most popular living authors. Under the treatment of irregularities, we have been giving what we regarded as proper directions for extracting deciduous teeth, and in as plain a manner as we knew how, and we did it as our bounden duty.

The *order* of eruption of the permanent teeth, is the order of extraction for the first set, and not in *rotation* as has been taught and practised, removing laterals, then canines and then first molars, but first molars after the incisors, then the second as a general rule, and lastly canines; I mean the first set. We do not write to censure, but to correct the wide spread mischief which has resulted from an erroneous view which was first conceived of—a proper or correct system of extracting the deciduous

teeth. We have also endeavored to show that it is not a correct practice to extract a deciduous tooth, even though the second is coming out of line, unless there is room for it in the arch by removing one deciduous tooth only ; but let the first remain until there is sufficient space developed for the second, as there is more hope of a growth of the arch with both teeth in, than when one is extracted. We think we have sufficiently illustrated that by cases already published. We never remove two deciduous teeth for one permanent one, no matter what apparent irregularity may exist, if by letting the shedding be performed by nature, and we should find at the age of fourteen or sixteen years of age, that there has not been sufficient expansion of the jaw to allow all the teeth to fall in line, by having all the advantage of the first set, then we find it time enough to extract one or more of the permanent teeth as the case may be. We do not extract a deciduous tooth at the age of four, five or six years, merely because it is an occasional cause of pain. We treat toothache in children as in adults, to preserve the mouth from contracting. If, in this degenerate age, nature is destroying the deciduous teeth prematurely, by decay, and only making a temporary destruction, it is no reason why we should aid her in inflicting a permanent injury for life. It is not aiding nature to extract a tooth because it aches ; it is true, it causes us a great deal of trouble to aid nature in retaining the first teeth in the mouth, long enough to fulfil the purposes of their development. If it be a burden to us to labor hard, and even expose a little sufferer to temporary pain for a time, it is no reason why we should by extreme measures rid ourselves of it, by destroying the mouth of an innocent creature for life. It is our duty, as much as in our power lies, to palliate pain in affliction as much as possible, for a more permanent good ; it is mistaken sympathy to get rid of a temporary evil by inflicting a permanent injury.

As regards the injudicious extraction of teeth, there is little hope of ever improving that evil to a very great extent. As long as patients work themselves up by a desperate effort to the "sticking point," they will be liable to induce dentists to act rashly in regard to the number of teeth extracted at a sitting, and the condition of the health of the patient at the time. We do not regard the extraction of a tooth of a female during pregnancy as injudicious, although it might have been highly so in the case referred to by Dr. Curlee. Many female patients are more liable to toothache, during and especially near "full term," than any other time, as there is an increased exhilaration of the circulation, and increased sensibility of the nervous

system and determination of blood to the head, all of which circumstances favor toothache, on the same principle that the increased or febrile exasperation of the evening, or forepart of the night of any one in health, accounts for the fact that patients complain more of toothache at that time than any other in the twenty-four hours; if a patient comes to us in the morning, and says that they have been suffering all the forepart of the night with the toothache, but are not suffering at the time they call, we at once infer that the pain had been induced by an exposed nerve. There is an increased sensibility of the pulp by exposure, as well as a slight congestion of the part, and during excitement or febrile exasperation, pain will be induced. If, in a female patient, there is no superstition as regards the operation during pregnancy, and the extraction of the tooth does not involve much time, extraction would do less harm than to allow the patient to be exposed to prolonged suffering during such a critical period. We are not a "tooth-puller" in any sense of the word; we do not extract a tooth for any patient, unless there is a dire necessity for it. Some patients wish a tooth extracted because it is unpleasant, or looks badly, or induces swelling of the gums sometimes, or may cause other teeth to decay, or make the breath offensive, or some other of an hundred reasons. Teeth are not always in a condition to extract; sometimes they are too much inflamed when the patient calls on us, such as in the case of the formation of abscess. It is never necessary to extract a tooth for pain in case of an exposed nerve, as pain from that cause can always be stopped. The tooth may be too much decayed, the crown may be decayed to the gum, and the alveolar process cannot well be cut away, to get hold with an instrument sufficiently to extract it, and it may become the cause of a great deal of suffering on the part of the patient, and labor on the part of the dentist. Hence, it would be the least of two evils to let it alone, until the gum shall have become softened, and the alveolar process absorbed. We are in the habit of waiting until a condemned tooth gets in condition for extracting, except in some extraordinary cases, and in such cases we can apply no rule, for they must be governed by circumstances existing and decided upon by the patient and the dentist at the time, and which depends upon the exercise of a judgment, which time, reflection and education only can develop. No dentist ought to extract a tooth for a female patient during pregnancy, without the knowledge of her medical adviser, although dentists who possess a good medical education, are often consulted by physicians, as regards the propriety of extracting teeth in patients in various conditions of health.

Some dentists contend that every tooth that cannot be plugged, ought to be extracted, no matter what age the patient is at the time they may be getting their mouth "put in order;" this is not true, except to a dentist who is blind or reckless to the changes it will produce on the mouth of a young patient, say at any period under twenty years of age. We are now treating four lamentable cases of irregularity, caused by *injudicious* extraction of *permanent* teeth; one patient is sixteen years of age, one eighteen, one twenty, and one twenty-four. Permanent teeth are necessary in the jaws, until they are properly developed, and until the teeth have become permanently articulated, so that when a tooth is extracted, it will not cause a derangement of that important condition. The parts change more by extracting a tooth for a patient under twenty than when older; hence when a tooth is extracted for a young patient, the parts will close up, not "fill up," by contracting the jaw, and produce defective articulation with its fellow, which may end in a serious evil. We will draw especial attention to this in our next article on irregularities. J. D. W.

OBSCURE DIAGNOSIS OF TOOTHACHE.

There is no more reason why a tooth should ache without sufficient cause, than one of the fingers of the hand should be a cause of pain while in a normal state. When a patient complains of pain in the jaw, temple, or over the whole side of the head and face, and there is no discernable disease of the parts, it is fair to presume, that it is caused by a tooth. Without going into a long description of the various causes of toothache, or pathological conditions of parts, inducing pain, the citation of a few cases may be of use to the young practitioner. A lady of fifty years of age, in general good health, called to see us about pain in her face, by which she had been suffering more or less for four weeks. She had called on a dentist near her residence to save time; she referred the pain to the left inferior bicuspid, both of which were considerably worn; the dentist could not discover in them sufficient cause of suffering, but plugged a small crevice in the second one, about as large as a small pin's head. The pain, however, continued the same; they were examined several times, with no better success; the patient applied to us, stated her case, we examined the teeth and found them as before stated, considerably worn; the first one the most, and in passing a fine pointed probe over the worn surface of it, we found a small opening and the pulp partly dead; we opened the cavity freely and cured the case. A gentleman called to see us, suffering pain along the inferior maxillary; there was no swell-

ing of the parts ; the pain had been endured about one week ; he always referred it to the inferior maxillary and the wisdom tooth, second bicuspid and space between them, as the first and second molars had been extracted for some years. The wisdom tooth had a large plug in it, which was removed by his dentist to ascertain whether it was a cause of pain, but it was not found to be, the bicuspid was entirely sound ; his dentist not being able to discover any cause of pain, the patient called to see us ; we found a very small orifice in the gum, which opened to a remnant of a root which had been left about three years before ; this was extracted and the case cured. A gentleman of nervous temperament was attacked with pain in the head and face, principally the left side ; he sent for his medical adviser ; he diagnosed it as a case of neuralgia, for which he employed narcotics, chloroform, ether, leeches, purgatives, &c., but all to no purpose. After treating the patient for about one week, during which time he grew much worse, the whole nervous system seemed to become involved ; he was at times speechless, he could not swallow his food, he would start off and run across the room involuntary if spoken to, or drop down upon his knees, and perform various gyrations as if crazed. He never complained of his teeth in the least, but his medical adviser called upon us to know if we would examine the case for him, as the patient grew worse under his treatment. We found that a front tooth had been plugged about a month, but had given no pain at the time ; we, however, removed the plug and found that it had been plugged over the nerve ; the tooth bled and the patient was at once relieved, but did not recover from the nervous excitement for some days. It was the most extraordinary case of suffering we ever witnessed. When pain follows shortly after plugging a tooth, although no pain was experienced at the time, we regard it with suspicion and remove the plug. In this case the nerves of motion, as well as the nerves of general sensibility, were seriously involved.

J. D. W.

This Issue.—Owing to a great desire on the part of many in the profession, who were unable to attend, to learn what was done at the last Convention, and presuming that *all* will be gratified to have the proceedings at the earliest moment, we concluded to anticipate our regular publication day, and issue our October number a month in advance.

We hope this will meet the approbation of our readers generally. Our next issue, consequently, will not be due till January.

J. R. M'C.

The Third Meeting of the American Dental Convention, held in Boston, was well attended, there being at least two hundred present; the New England States, especially, being well represented. Various subjects of general interest, as will be seen by the very full report of the proceedings published in this number, were fully discussed, and all who participated, we are sure, were profited as well as gratified with the meeting.

From the numbers attending, the harmony and fraternal feeling manifested, the useful character and beneficial results of the discussions, we must conclude that the Convention has become an institution calculated to accomplish much good, and that, therefore, it demands and should receive the earnest and efficient co-operation of every one having the interest of his profession at heart.

As will be seen, the next meeting is to be held in Cincinnati, where, we trust, there will be a large gathering. We must not close, without a remark as to the entertainment furnished by the profession of Boston and vicinity. In brief, then, it was just the thing, happy in the conception, admirably managed, and every way satisfactory. May all those who participated, live to enjoy many repetitions of such agreeable re-unions.

We would not have forgotten the suggestion made by one of the speakers on the excursion,—of a meeting of the Convention, at some future period, in London, and there hold a “World’s” Dental Convention. We hope the profession will think of this seriously. What say our cotemporaries, at home and abroad, on the subject?

J. R. M’C.



Committee on Experiments.—In the proceedings of the last American Dental Convention, our readers will learn of the appointment of a committee, and of the intention to establish a fund to employ a suitable person or persons to conduct experiments on various subjects connected with dental science, and to which we desire to direct special attention, in the hope that the profession at large will enter into the spirit of the movement, and render all the aid necessary for its successful accomplishment.

J. R. M’C.



As will be noticed, the proceedings of the last meeting of the Convention absorbs a large portion of our pages; consequently, many communications have necessarily to lay over till our next issue. This will explain their non-appearance in this number.

Thirteenth Annual Announcement of the Ohio College of Dental Surgery.

Second Annual Announcement of the Pennsylvania College of Dental Surgery.

We have received the above announcements, and have only room to say, that they indicate a healthy condition of their respective schools, and offer ample facilities for a thorough course of instruction in the science of dentistry.

The Quarterly Journal of Dental Science.—In our notice of the first number of this journal, we were in error in attributing the editorship to Dr. James Robinson,—this gentleman, we are informed, being only a contributor to its pages.

British Journal of Dental Science.—A typographical error occurred in our last issue, in giving the name of the supposed editor of this journal. It should be Mr. John Tomes.

A Treatise on the Use of Adhesive Gold Foil.—By ROBERT ARTHUR. 86 pp. 8vo. Jones, White & McCurdy: Philadelphia, 1857.

This work is published to meet the frequent demands which are made upon the author for thorough information as to his “new and improved method of using gold foil,” of which some account has been published, within the last two years, in the “Dental News Letter.”

The headings of the Sections, into which the work falls, will indicate the range of the subjects treated—we give them to help to a proper apprehension of the claims of the treatise. They are:—Adhesive Gold Foil—Gold—Common Methods of Using Gold Foil—The Rope—The Strip or Tape—Pellets—Cylinders—Formation of the Cavity—Employment of No. 30 Foil—Adhesiveness Formerly Considered a Defect—Sponge, or Crystal Gold—Annealed Gold—Heating the Foil before Using—Instruments—Hardening and Tempering—Preparation of the Gold—Method of Preparation for Use after Heating—What No. of Gold is Most Suitable—Method of Filling with Adhesive Gold—Fixing the First Pieces Introduced—Defects in the Filling—Other Difficulties Attending the Use of Adhesive Gold—The Saliva—Method of Applying Napkins in the Lower Jaw—Mucous Secretion—Styptics—Pressure—Tin Foil—Can Gold be Welded?

Dr. Arthur's position in the profession is sufficient to induce the general reading of any carefully considered work of his upon any department of the theory or art of dentistry, and his experience of

any new method in its practice, will command deserved attention without any word of ours. This is all that an editorial notice can do for a publication under review. The book is submitted to the judgment and criticism of the practitioner for his own decision, and that will settle its worth. We might, therefore, content ourselves with a simple announcement; but we feel prompted to add a very few words, which must serve to give our general impressions of the treatise. It gives a good and true theory of caries, and a thorough and candid review of the various modes of preparing gold for the last twenty years. It describes the use of rings of india rubber, for keeping out moisture during the process of filling, and does a signal service to the profession, by insisting that to insure perfectness in the operation of filling, the parts *must* be kept dry. The space devoted to the art of making and tempering instruments, deserves commendation; it would be well if all practising dentists would learn to do this for themselves, and the instruction here afforded is ample, as it is useful and necessary.

With respect to the new method, which he claims to have introduced, we can only say, that it is well worthy of a candid examination and a fair trial. Differences of opinion meet all novelties in practice, and the authorship of the best of them is usually disputed with the first publisher. If Dr. Arthur's method should encounter the common fate, and survive the shock, the profession will have the benefit, and the author of the treatise will have abundant compensation in the sentiment expressed in his own generous language. "It is a legitimate source of satisfaction to receive commendation when it is justly bestowed, but it is of much greater importance that the community should be benefited by improvements, than that the originators should obtain credit for having made them."

It is, we think, quite clear that the author has given an entirely *new method* of *packing* annealed foil, though some practitioners may rightfully claim to have annealed their foil years before his announcement; and, it is to be observed, that whatever benefit there may be in the plan, lies in the peculiarity of his method and manipulation.

The Doctor has done well to give so full and frank an exposition of his method and experience, and so able a presentment of his opinions founded upon it.

The book is written in good English, and bears, throughout, the impress of candid, earnest and honest authorship. It will receive from the profession all he asks for it and for himself, for he claims only what justice and sound judgment may finally award him. E. T.

THE DENTAL NEWS LETTER.

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No. 2.

COHESION AND WELDING OF METALS.

Read before the Pennsylvania Society of Dental Surgeons.

BY. W. CALVERT, D. D. S.

To more clearly define a position, I will, as briefly and concisely as possible, consider what is the plain common sense and practical teaching, as well as what I conceive to be the true philosophical meaning of the terms *cohesion* and *welding*, after which, I will consider their respective analogical application to some of the metals.

The different circumstances or conditions, under which these terms are made use of, convey to the mind an apparent, if not an entire, difference of signification; whereas, if carefully and properly considered, in relation to the constitution of the bodies in which their effects become visible, they *are not*, in themselves, conflicting terms, but, on the contrary, have a strictly concurrent meaning, and differ only in their expressive application; that is to say, that by cohesion, is conveyed the idea, both of union, and a bond of union, of atoms, particles or bodies, while, by welding, the mind becomes cognizant of the union of two or more *metallic* bodies or masses under certain circumstances.

Now, what is cohesion, and what is welding? Cohesion or cohesive attraction is that force, which, so to speak, fixes or unites the atoms, molecules or particles of a body in a relatively definite position,—a state of aggregation,—and continues so to bind them together, unless overruled by some counteracting force. It is shown in the resistance offered to the separation of bodies; indeed, it is *the resistance* itself, existing in the particles adverse to their dissolution. The degree of the cohesive force is but relative. It is found that in the usual metallurgic operations, that a metal may at one time possess all the properties and qualities peculiar to it, while, at another time, and for no obvious reasons, its condition may be such as to render it almost entirely useless, at least, so far as relates to its utility in working. It is likewise exemplified, in the electro-metallurgic manipulations, in the various states of aggregation. In one, the deposit will be strictly crystalline, possessing, it may be, even but little cohesion, while, at another, the reduction will be what is termed reguline, possessing to

the utmost, the capacities of the same metal, reduced by fusion. These effects to us are obvious, and also, that they are the result of certain causes, yet, to attempt an explanation of the nature of such causes, lead us, not only to the ultimate constitution of bodies, but of matter itself, of which we have not even the most remote conception.

And now, what is welding? Welding is applicable alone to the metals, and, taken in its usual acceptance, is, as I have before indicated, the union of bodies already existing in a state of aggregation, which union, to be effectually developed, involves the application of certain laws or forces in such bodies, and, whatever are the observable effects so produced, we argue *a posteriori*, the results of an already existing cause. Welding is, then, a union, intimate, perfect and thorough. But let us inquire, what constitutes the bond of union existing beforehand, in this aggregate condition, and from what law of forces this state of things has been produced. We here argue, that it is the preponderating force of all aggregate conditions or solids, that constitutes the bond of union therein, which force is the attraction of cohesion; therefore, upon the ground of specific form, consequent upon the cohesive force, it inevitably follows, that any and all combinations or changes of form or structure, must accord with the law of development already established. The true cause, then, of such union or welding, so far as appreciable to us, is the inherent property of coherence, or affinity of the particles co-existent in themselves. The union, then, self (or analytically) considered, is cohesion.

To elucidate the truthfulness, or further test the philosophy of the argument already adduced, let me here ask, whether, so far as the immediate union goes, welded metals are capable of resisting in an equal degree with other parts, or to any considerable extent, a force that may be applied to overcome, disunite, or sunder them at their juncture; and if so, in what does this resistance consist? That two pieces of iron welded together, offer a resistance equal with other parts, in attempting a forcible separation, is a fact so well established, and with which every one has become so familiar, that it is needless for me to attempt any argument upon this point. As to the power by which these bodies are held together, I would say, that we cannot account for, nor, indeed, can we conceive of any tenable hypothesis upon which such bodies would maintain their plenary strength and common characteristics, other than the force of cohesive attraction.

The union of metals, dependent upon the cohesive force, under other circumstances, than reduction by heat, except in iron, is by some doubted, contending rather, that such union, when effected, is mechani

cal, and not at all dependent upon cohesive attraction. It is further urged, in support of this theory, that the union may be brought about by one portion of metal or its crystals, being driven or forced into the corresponding pores of the other, thereby forming a kind of fabricated attachment.

That this property or tendency to unite, as mentioned, is attributable to cohesion, becomes more apparent, as we take into consideration the fact, that both platina and gold can be wrought into massive condition without fusion, and are susceptible of all the modifications in forging, milling and drawing, that the same metals are when *known* to be influenced alone by cohesion. I have just assumed platina to be one of the metals capable of being worked,—forged, rolled or drawn into wire—without undergoing fusion. URE, in giving the treatment of the platina from the Ural Mountains, speaks of it, subsequent to precipitation, in the following manner: “For the agglomerating of the platinum, the spongy mass is pounded in bronze mortars; the powder is passed through a fine seive, and put into a cylinder of the intended size of the ingot. The cylinder is fitted with a rammer, which is forced in by a coining press, till the powder be much condensed. It is then turned out of the mould, and baked 36 hours in a porcelain kiln, after which it may be readily forged, if it be pure, and may receive any desired form from the hammer.”

In crystal or sponge gold, too, we have this same peculiar property clearly exemplified. Let us now inquire as to what crystal or sponge gold is; how prepared; and, whether, in the course of such preparation, the molecular forces are broken up or destroyed, and whether there is a new force created, by which after-union *may* become mechanical. In giving this process, we will call in the aid of mercury. Now, in all the metals do we find the preponderance of the cohesive force, save in mercury alone, in which, the two forces (cohesive and repulsive) are almost balanced, hence its liquid condition at ordinary temperatures. The fluidity of this metal is identical with the fusion of other metals under ordinary circumstances, although, in the latter, an increase of temperature is requisite, in order to bring about their fluidity. It is evident, that the fluidity of mercury, and the fusion of other metals, are one and the same, inasmuch, as the repulsive force existing in the one is identical with the heat (it being a repulsive force) applied to the other; hence, the conclusion, “like causes produce like results.”

But to return,—I stated that, in the preparation of crystal or sponge gold, the employment of mercury would be made essential.

The first step, then, in the way of preparing it, would be amalgamating the gold and mercury, and next, getting rid of the excess of the fluid metal, which may be readily accomplished by subjecting the amalgamated mass to pressure; this will leave a coherent plastic mass, still containing a large proportion of the baser metal. Not wishing, however, to retain this or any other impurity in combination with the gold, it may next be subjected to the action of nitric acid, which will dissolve out the residue of the mercury, leaving the gold free,—a porous mass of slightly coherent crystals. To recapitulate: the cohesion of the gold disappears in amalgamation, the excess of mercury is pressed out, leaving a coherent plastic mass; this mass of the crystals of gold, the inter-crystalline structure of which is made up of mercury, being acted upon by the acid, leaves the pure gold free,—a porous mass of coherent crystals. Had the mass been deprived entirely of its cohesive or molecular forces, it would have crumbled away or fallen to pieces, or else we must conclude, that a new force has been set up, acting mechanically, which, from the nature of the changes, we cannot readily conceive. It is true, nevertheless, that the cohesive force is greatly diminished, in consequence of porosity attained, or the separation that has taken place in the metallic particles, but, *in virtue*, the force remains, modified only in degree.

The porosity of metals is by no means an idea of recent origin; it is shown even in the molten metals by their susceptibility to compression and expansion, and although what I have here advanced, may at first seem to convey it beyond its legitimate bound, still, I am unable to discern that it is in contra-distinction to this universal principle.

We are now led to the packing or condensation of this gold. If, from the foregoing, it would appear that there is an union at all of the metallic particles, at the completion of the crystalized mass, it must, I think, have been clearly indicated, to be dependent wholly upon the attraction of cohesion, and upon *none other*. Furthermore, assuming again the ground of mercury and heat in their practical application, as identical, and that “like causes produce like results,” we argue that in the abstraction of the mercury, as upon the withdrawal of heat, the character or condition of the bodies so influenced, must undoubtedly harmonize: i. e. the character of gold in the spongy mass is precisely the same as that that has been fused. If, therefore, prior to the application of any mechanical agency, we have the existence of cohesive attraction, no matter in how limited extent,—how much the absolute strength of the body may have been diminished,—it is but rational to conclude, that any subsequent procedure towards condensation, must inevitably follow the law of existing forces.

It may, however, be argued, that an union may take place mechanically, by the interlacing or interlocking of the crystals. While there may be, and doubtless is, an interlacing or interlocking of crystals, still I contend that, as they are brought into closer contiguity, their union is not *specifically* that of entanglement, but, that they are arranged agreeably to the preponderating force peculiar to all solids.

A very satisfactory experiment by way of testing the practical merits of what I have been saying upon the union and condensation of sponge gold, is in itself very simple, and at the same time quite conclusive. Take a thin ribbon of pure gold of any dimensions, say two or three inches long, and from a quarter to a half an inch in width, cut in two, and having the newly cut ends perfectly clean, wet them in mercury; then having prepared a small mass of amalgamated gold, as if for making sponge gold, and having the excess of mercury removed, place the two pieces of gold previously wet with the mercury, in close proximity, yet so that they will be slightly separate, and lay the gold amalgam on them, thus uniting them; the ends of the plate not quite touching. The whole may now be placed in a vessel containing nitric acid, and the remaining mercury thereby removed; this leaves a spongy mass of crystals connecting (feebly) the two plates of metal. With care the united gold may be dried and gradually condensed under the hammer, annealing as becomes necessary, until the whole is made thoroughly solid. It may afterward be passed through a rolling mill, or subjected to like tests, when it will be found that a thorough union, or welding of all the parts, has been effectually accomplished.

From what has already been advanced, it must be obvious that I assume a regular order of crystallization to ensue, simultaneously with the evolution of the mercury, and as the crystallized mass undergoes condensation, as in the molten metal, at proper intervals, the application of heat or annealing becomes necessary, in order to re-arrange or maintain the crystals in their regular order, or (if you please) polarity. If, however, the principle of union, binding the particles together in relative positions, has not already existed in the body, independently, the application of heat, self-considered, is totally incapable of producing it.

A question then arises, as to why bodies, in the solid state, will not unite. I answer, that in solids the attractive force in the bodies themselves, seem to overrule their attraction for other and similar bodies.

In gold attenuated as foil, there is unquestionably an increased attraction over the metal in a more massive form. In preparing it, the application of mechanical means is brought to bear, counteracting, or

tending to overcome, by the separation of the particles, the cohesive force in the metal, and as the cohesive force is in the one diminished, it is likewise increased in the other,—in the foil. This is shown, by simply taking two sheets of foil and gently heating them, and then bringing them in contact. Their union, thus, without almost the slightest pressure, is such, that in attempting their separation, the sheets readily tear without parting the united lamina.

The same principle is further illustrated in the union or welding of any number of sheets of foil. By regularly and closely folding them together, they may, with careful management, be forged under the hammer, into a square bar, due attention being had to the process of annealing. In this way, with proper care, a solid bar may be wrought, bearing every aspect of the molten metal. It may also from this, be drawn into fine wire, thus proving, most conclusively, that gold can be welded.

It may be said of the illustration before us, that union can only be effected through the agency or application of heat. While it may be true, that heat is indispensable, in the accomplishment of such results as are here instanced, it is nevertheless equally true, also, that heat is not cohesion; indeed, it is diametrically opposed to it. Heat, as I have before said, as I again say, and as I am aware, from its effects, is a repulsive force, is opposed to union, and favors dissolution; therefore, practically, its effect is that only, of giving freedom and normality to particles,—giving place, upon its withdrawal, to the full force of cohesion.

Having quite satisfied myself of the positions I have here assumed, not so much, perhaps, from abstract reasoning, as from absolute fact, I here give them for the consideration of whom it may concern.

For the Dental News Letter.

MESSRS. EDITORS:—A girl, eleven years of age, suffered for some time with severe tooth-ache in the second molar of the inferior jaw. The father informed me that he had applied to several physicians, who refused to extract it. When I was called in, there was considerable discharge just in front of the angle of the jaw. I split the tooth, and extracted a fang at a time, and in a few days the discharge ceased, and the wound healed kindly by suppurative granulation, leaving a very small cicatrix.

Respectfully,

D. STRINGFELLOW, D. D. S.

For the Dental News Letter.

TUBULAR CONSOLIDATION.

BY J. FOSTER FLAGG, D. D. S.

Trusting that a short article upon that structural change, consequent upon the progress of caries, known as tubular consolidation, will be acceptable to your readers, I offer the following for your acceptance. The interesting facts which are expressed by this term, were first given to our profession, within the recollection of even the youngest of us, scarce ten years having elapsed since Mr. Tomes called attention to them during his course of lectures at the Middlesex Hospital, England, and it may have been the comparative freshness of the subject which has influenced me to a choice of it.

That a consolidation of dentinal tissue is the result of caries, is perfectly apparent to the naked eye, in almost any section made from a carious tooth; it therefore seems proper to commence with such reflections as may suggest themselves relative to the causes of this effect.

Caries being acknowledged by all, at the present day, to be due to the action of dilute acids, and dentine being as generally conceded to possess a certain degree of vitality, it becomes no longer a matter of *speculation* as to cause, but reasons may be given for it with philosophical exactness. The well known truths, that acids will cause irritation, that the dentine is vital, and that irritated vitality induces increased action, form a combination key to the mysteries of this formation.

The earthy constituents of the dentine being, however, merely a *product*, we have to take one step farther, before we can comprehend, with perfect clearness, every feature of this process. The pulp, in its primary and secondary relations to the dental structure, has to be considered, and full knowledge upon this subject is absolutely requisite. But, when it is understood, that the pulp cavity is filled with the remains of that organism from which has been derived the entire substance of the dentine, and that the progress of this development has only ceased, as, by the gradual approach toward the completion designed by nature, the supply of blood to the part has been diminished; that this remaining pulp is possessed of sensibility to a very high degree, and, consequently, in its normal condition, is well protected from injurious influences; nay, more, that it is capable of additionally guarding its own integrity, by an actual deposition of secondary dentine, then, indeed, are we able to draw inferential conclusions which are unquestionably reliable with regard to the *source* from whence

has been derived the constituents requisite to effect the change of which we are treating.

The primary relation which the pulp sustains toward the dentine, has been proven, by microscopical research, to be that of a medium, through which, such earthy particles have been extracted from the blood, as have imparted the necessary solidity to the tissue which it was designed to eliminate, and, having performed this function, it commences the discharge of those duties comprised under what must be termed its secondary relation, viz: the continuance of vitality, causing, by absorption and deposition, that actual change of material, which physiology teaches us is constantly occurring in every tissue of the animal economy.

What, then, would inevitably be the result of an irritation of this gland?

The term "irritation," in its common acceptance, simply signifying an excess of vital action, manifested by exalted sensibility and increased circulation, would seem, of itself, to intimate that the reparative efforts of nature were being exhibited in that substance, through which had been transmitted the fact that such an exertion was called for. In the case of dental caries, that substance is the dentine, and it is therefore in it that we are to find traces of a deposition due to altered action.

Even were it not true, that the microscope demonstrates, by the comparative opacity of that portion of a section, from a carious tooth which borders the parieties of the cavity of decay, that the change which has taken place is due to an excess of inorganic substance, it might reasonably be inferred, that such *would* be the case, remembering that, in proportion as the dentinal pulp ranked high as a formative tissue, in proportion to the degree of energy which characterized its productive power, in proportion to the vigor with which it seized upon such particles as were indicated by affinity to be its proper "pabulum;" so was a structure rapidly built up consisting of so large a percentum of earthy constituents, as to render it by far the densest and hardest tissue of which the system is composed.

It has been suggested, that this effort can be intended as one of two things only; a preventive to the destruction of the substance of the tooth itself, or a protection to the vitality of the pulp. Believing, as I do, that it is entirely a *protective* action, I shall occupy a short space in presenting a few of the reasons which have induced me to thus view it.

Whatever vital impressions may be conveyed to the dentinal pulp, from external agents, the inorganic material would most certainly not

be selected as the vehicle for communication, from its evident incapability to perform such a duty; an abnormal condition is therefore induced through the agency of the animal matter contained within the tubuli, possessed, as it is, of every physiological requirement for the fulfilment of that function, even being, according to recent investigation, a direct fibrous emanation from the body of the pulp itself.

The action, then, which nature resolves upon, is, to diminish the degree of impressibility in that tissue, which, after the removal of the enamel, remains the sole protection of the pulp, and, erecting its first preventive to irritation, at the point most distant from the excited organ, that excitement is allayed, a healthy condition re-established, and vital action reduced to a normal standard. This continues undisturbed, until, in the never ceasing progress of decay, the deposition is, to a certain extent chemically decomposed, and vitality of still another portion of the dentine destroyed, when all the phenomena attendant upon irritation and secretion are again exhibited. This is clearly shown upon examination, as various distinct lines of consolidation are presented, consequent upon the death of the intermediate parts, thus precluding the possibility of a deposition within their limits.

The only action which would be potent, to *prevent further destruction* of the tooth substance, would be the elevation of that substance to a degree of vitality, which would render it capable of resisting its destroyer through that agency alone, and it will readily be perceived of how much utility, for the rude purposes of mastication, such a denture would be. So far, then, from this being the case, I contend that the portion exposed, is rendered even more liable to decay, than before; so far from a barrier against the progress of this disease having been instituted, fuel has but been thrown to the flames. The acids contained in the secretions of the mouth, have now a substance to act upon, over which they possess an undisputed power; unrestrained by even the smallest proportion of that animal tissue which can, at least, resist until death renders it powerless. That it offers this resistance, is abundantly verified by the facts presented to us in that species of caries known as "white rot," the progress of which is so exceedingly rapid as to destroy all that portion consisting of the same material as that by which "consolidation" is produced, yet, leaving the organic filaments with not only vitality, but with their sensibility exalted. Have we not also daily evidence, in the presence of remaining fangs, that after both dentine and enamel have fallen before their foe, the cementum resists, for years, its continued attacks, and, indeed, generally yields only to the cold steel? And who will say, that this is

owing to *its* superabundance of earthy matter? Who rather will not say that it is due *only* to its excess of cartilaginous substance? Yet, the dental pulp would hardly tolerate the existence of such a medium as this for a protection to it against external agents, especially when, as is the case in febrile affections, the teeth are bathed in fluids peculiarly acidulous.

On the other hand, is not *self-protection* conceded to be the first law of nature, and does not common sense suggest the deduction that efforts would therefore first be made tending toward the accomplishment of that end? Admitting this, what more remedial than to effectually shut off all vital communication between the agent affecting, and the organ affected, and what more perfect, for this purpose, among all the various products of the human laboratory, than the one called into requisition, viz: the neutral phosphate, composed, in about equal parts, of acid and lime; thus leaving an excess of the latter to be acted upon by the exciting cause of the disease, which, though really reducing to the utmost its power of conduction, offers, at the same time, a compound exceedingly soluble.

In conclusion, I would ask merely to call attention to the fact, that the condition under consideration continues, even when by a well performed plugging operation, all liability to further decay, at the point treated, is precluded—but, while the destruction of the pulp from caries, is no longer to be feared, a material has been interposed eminently calculated to convey unpleasant impressions arising from an excess of heat or cold, thereby requiring still the presence of this preventive to irritation.

CASE OF PARALYSIS OF THE MUSCLES OF THE FACE.

BY J. D. W.

A young gentleman, of about twenty years of age, called to consult us about the extraction of some of his back teeth, which had been decayed down to the gums for some time. He remarked to us that his face was swollen and stiff, so that he could not smile, and the teeth were considered the cause. He was of a nervous, lymphatic temperament, with a rather fullness of the face, but of a white or pale appearance; there was no pain attending the case. Upon examination, we found that he had partial paralysis of the muscles of the face, and advised him to go to his medical adviser; he did so, and in a short time, the case was relieved; the teeth were afterwards extracted. His physician believed that it would have been an imprudent operation to have extracted them before.

For the Dental News Letter.

OBITUARY.

Departed this life, in Kaw Mendi, West Africa, on the 16th of October, 1855, of fever, Rev. James Cutler Tefft.

The subject of this notice had, for several years, been a devoted minister of the Gospel, and a faithful missionary of the Cross of Christ. He ardently loved the work in which he was thus engaged. His whole soul seemed bound up in the one great subject: that of setting forth the example and love of his blessed Lord and Master. He strove to make himself useful in all things, and especially did he endeavor to live up to the precepts taught in the Golden rule. Mr. Tefft also buried a wife and child in Africa.

The deceased was a native of Ticonderoga, N. Y.; he spent several years in Oberlin, Ohio, where, by his industry and perseverance, he went through a collegiate course of study, both preparatory and theological. During his course of study, he also studied the profession of dentistry, and became master of his profession as surgeon dentist; he also improved the opportunity of becoming acquainted with the Hydro-pathic treatment, thereby enabling him to be more useful to those in his own as well as in a foreign land. In life, beloved, and in death, lamented. A loss to friends; but to him, O, how great the gain. "Blessed are they who die in the Lord."

He highly prized the *Dental News Letter*, which was kindly sent him while in Africa, and for which he wrote a short sketch on the preservation of dental instruments in tropical climates, and on the teeth of native Africans.

M. TEFFT.

Dr. Thomas Hughes Edmunds was the third son of Richard and Lydia H. Edmunds, and was born in Cape May County, N. J., August 16th, 1818.

Early in life, he chose the profession of Dentistry, and was placed by his parents, when in the 18th year of his age, with Dr. Matthew Foster, in Arch street, Philadelphia. In the spring of 1838, having devoted himself assiduously to the study of his profession, he settled in Baltimore, Md., and commenced practice. In 1840, he was married to the daughter of a merchant of that city, and in 1848, being in delicate health, and advised to seek a country residence, he removed to Essex County, Virginia, where he remained, practicing in that and adjacent counties, about eighteen months; but finding a country practice too laborious, and requiring his too frequent absence from his family, he again removed to a city, choosing Richmond, Virginia, as a location. He there soon established himself in a fair practice, which

continued until suddenly snatched from his family by death; he, however, acquired not more than a competency, "being," (as was said of another,) "devoid of that characteristic which is regarded by some as the greatest of worldly wisdom,—the peculiar faculty of hoarding earthly treasure." He was, on the contrary, liberal and generous *to a fault*.

A pressure of business at the time which induced him to make extra exertions, brought on typhoid fever, and after seven weeks of intense suffering, he died on the 14th of January, 1857, in the 39th year of his age, and causing the first blank in a family of twelve children, all grown.

Dr. E. had many warm friends; numbers of his patients became such from only a professional acquaintance; his manners in his office were exceedingly suitable to a dentist, combining firmness and consideration with gentleness, patience and forbearance, qualities essential to success in pleasing, while his skill was considered equal to any in his profession. He availed himself of all the real improvements, but had a great repugnance to "humbugs." When the use of chloroform, in surgical dentistry, was called for, he was always very cautious in its use, and though having administered it over 800 times, without accident or injury, he never preferred it.

Dr. E. was one of the original signers of a petition to the Legislature, to charter the first Dental College in the State of Maryland; he was then practicing in Hanover street, Baltimore. His early death has caused a widow and five children to mourn, when they most needed his counsel, direction and support, and for whose sake, mainly, he expressed himself on his death-bed, anxious to live.

The writer of this brief and imperfect tribute to the memory of one he loved, having known him for many years, and for nearly seven previous to his death, having been connected with him in business, feels, that by his death, he has lost a valued friend, and the dental profession an honorable member.

G. B. S.

Richmond, Va., November 19th, 1857.

ESTEEMED FRIENDS:—It becomes my melancholy duty to inform you of the death of Dr. William Grimes, (my associate in the practice of dentistry, since he graduated in your city, until recently.) He retired to his father's house and farm, 4 miles south of Richmond; where he remained until his death, which took place on the morning of the 24th inst., aged 28 years, by that lingering, and fell destroyer, commonly known as consumption.

Yours, as ever,

WM. R. WEBSTER.

NORTH CAROLINA STATE DENTAL SOCIETY.

GREENSBORO', October 7th, 1857.

The Second Annual Convention of the North Carolina State Dental Society met in this place, agreeable to adjournment.

The President, Dr. Bason, being absent, Dr. Bissent took the chair. Drs. E. H. Andrews and J. H. Wayte, of Charlotte; Hubbard, of Newbern, and Tate, of Statesville, were unanimously elected members.

The next business was that of reading the essays from Dr. Bissent—subject, "Sensitive Dentine;" Dr. Gregg—subject, "Insertion of Artificial Dentures." Dr. Bason being unable to attend, favored us with an interesting congratulatory epistle, in which he offered the following resolutions, which were unanimously adopted, viz:

Resolved, That this Society, anxious for the elevation and approbation of correct principles in our colleges, discountenances the practice of selling office rights to our candidates for graduation, who have paid the full ticket to all the professors, as well calculated to lower their standing with the public, and place them beneath the sagacity of dealers in office rights.

Resolved further, That we discountenance the practice of peddling or selling office rights, by those properly entitled by graduation to all the privileges and immunities of the profession, to any member of this society.

Resolved further, That we will mutually aid and assist each other in the dissemination of everything new and interesting, which we may in any way obtain possession of after this date, which may have a tendency to advance the interests and honor of this association.

Adjourned to meet next day at 10 o'clock.

The first business was to elect officers, which resulted as follows:—Dr. E. H. Andrews, President; Dr. D. P. Gregg, Vice-President; Dr. D. W. C. Benbow, Secretary; Dr. Hubbard, Treasurer.

Drs. Scott, Gregg and Benbow, Examining Committee, through whom candidates for admission into the society will have their names offered at the next Convention.

It was then *Resolved*, That this Society heartily approve of the suggestion made by the National Convention, concerning the securing of a chemist or some competent person to conduct experiments, Physiological, Pathological, Chemical and Hygienic, as connected with Dental Science.

We then had a very interesting discussion upon the following subjects, viz: Sensitive Dentine, Filling Nerve Cavities, Abscesses, Fractures, Deformities, &c., and their best treatment.

Dr. Andrews related the circumstances of a case that came under his charge. It was the mouth of a young man, for whom he had

within the last two months removed eleven teeth from the space that one of the central incisors usually occupies, and that the young man stated, prior to the first of August, he had had from time to time some eight or ten extracted from that same place. Strange freak of nature, that so soon as one tooth becomes loose and is removed, another supplies its place. [Is there not some mistake here? ED.]

Adjourned till evening.

Drs. Andrews, Scott, Howlett, Tate and Benbow were requested to prepare papers for next meeting. Professional *fees* were agreed upon. Time and place of holding next Convention, being Charlotte, on the last Wednesday in September, 1858. Drs. Gregg, Scott, Bissent, Andrews and Benbow are the delegates to the next annual meeting of the National Convention.

The motion of adjourning was passed.

E. H. ANDREWS, *President*.

D. W. C. BENBOW, *Secretary*.

ABSCESSSES.

SANDUSKY, O., July 28th, 1857.

GENTLEMEN:—I have just extracted the fangs of a left upper first molar, of a lady who said she had been troubled with neuralgia on that side of the face for some time. The inner fang having become attached to it, as you will see by the inclosed, I thought it rather a singular case, and concluded to send it to you for inspection. If you have any comments to make upon it, let it appear in the next number of the News Letter. Yours, &c., D. F. WEMPLE, S. D.

The specimen referred to in the above, has been received and examined. It was dry when we received it. The bulb attached to it was about as large as a small pea; we cut it open and found it hollow; it was evidently the *Pyogenic* membrane, or what is commonly termed *sac*, and which is at the extremity of every fang that causes a fistulous opening in the gum; and the reason why they are not always extracted with the fang, is because the sac is attached more strongly, and to more surface of the socket than to the fang. But sometimes, as is true in the specimen before us, the walls of the sac are extremely thick and strong, and hence it was extracted with the root.

These sacs enlarge sometimes so as to be felt by pressing upon the gum opposite the end of a root; in such cases, the external alveolar plate is absorbed. They cause displacement of the bone so as to pre-

sent the appearance, in examining a jaw, where they may in life have existed, as though a marble had been buried at the end of the fang. It is not always true that a fistulous opening is found to lead to those sacs; when they become large, they excite inflammation of the gum, and ulceration takes place, and they discharge; and frequently the gum heals immediately, and so remains until the sac fills again, when there is a repetition of the same thing; and thus it may go on for years, until the parts become so much broken up by frequent attacks of inflammation, that the patient is induced to have the root extracted. Yet we have known some cases to exist for years, and disappear without any apparent cause. These sacs are always the result of destroyed pulp, and the external surface of the fang will always be found denuded of its peridental membrane. We do not think those sacs cause pain of a neuralgic character; they may excite uneasiness in a part while filling with pus and enlarging, but when they excite inflammation in the gum it is of a decided character. They are never a cause of pain while discharging through the gum.

There does not seem to be any certain remedy for those sacs or abscesses as they are sometimes called. Some have said that they cured them by cutting down to the end of the root, and scraping them out; others by passing through the root creosote, chloride of zinc, nitrate of silver, &c. We have never obtained any perceptible advantage by any treatment except keeping a tent of lint in the fistulous opening when it exists, and by so doing, hope to drain off the pus as fast as it forms, and induce absorption and contraction of the sac. Where those sacs are supposed to exist on the roots of teeth that it is desirable to preserve, it is a good practice to clean the root thoroughly, and fill the canal with gold as completely as possible, and trust to nature for the rest.

J. D. W.

FUNGUS AND HEMORRHAGE FROM THE EXTRACTING OF A TOOTH.

TO THE EDITORS OF THE DENTAL NEWS LETTER—*Gentlemen*:—Should you think the following case of any professional interest, you will be kind enough to give it a place in the News Letter.

Mrs. L——, of this town, aged 25 years, of a bilious temperament, called on me to have the first left inferior molar extracted, which I did, and there was no more bleeding at the time than was usual; but it increased until midnight, when I was sent for to go and see Mrs. L., “who was bleeding to death,” (so stated.) I arrived, and

found her much exhausted, from the loss of blood. On examining the mouth, I found that there was a fungus growth sprouted out from the socket, where the tooth had been taken out, which was some two inches long, and nearly one inch in diameter. I took a pair of scissors, and cut it off, when I cauterized it well, and applied some astringent, which checked it for some three or four hours, when it again commenced bleeding. I was sent for, and on examining this time, I found the fungus had sprouted out again, and bleeding freely, as before; this time I cut it out to the *bottom* of the socket, with a gum lancet, and took a piece of lunar caustic, and cauterized the socket well, and filled it with the scrapings of the inside of new sole leather; then I cauterized the edges of the gum around the leather, and charged Mrs. L. not to remove it, until nature done it for her. The above treatment proved successful; it is the first case I ever saw or read of, which was similar. A very eminent physician of this place, informed me that a gentleman died in this place, similarly affected, i. e., he had a tooth extracted, and there was a fungus growth sprouted out, and kept on growing, notwithstanding the physician kept cutting it off, but I did not learn whether the bleeding accompanied that case or not.

Does the bleeding always accompany fungus; and is this case new to you? It may not be to you or to the profession, but it was to me.

JAS. E. SCARBROUGH.

La Fayette, Ala., August 6th, 1857.

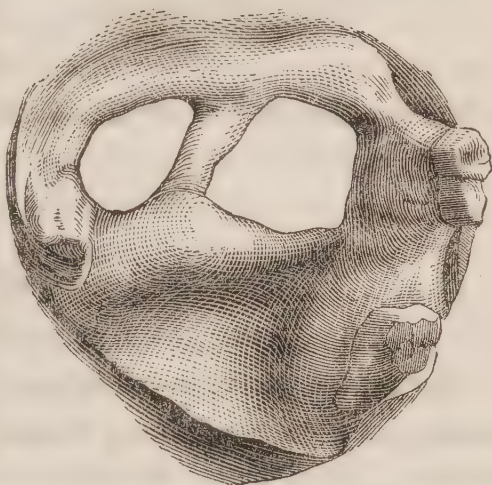
The case furnished by Dr. Scarbrough is one of considerable interest to the profession. The case is not new to us, nor to any one who has had considerable practice, as it belongs to the *hemorrhagic temperament*, and is frequently met with, but, perhaps, not of so marked a character. It is due to a defective coagulability of the blood. It is when the red globules of the blood are not held together by the *fibrin*. The serum and the red globules of the blood are washed away by rinsing and spitting, and the fibrin is left in and about the socket of a tooth and the gums, and is mistaken for a *fungus*. We have often seen this fibrin hanging out of the mouth three inches, and so very tough as to require cutting with the scissors. Dr. Scarbrough adopted the only proper method of arresting the hemorrhage in the case referred to. It is always necessary to cut away all the defective clot, and apply, as speedily as possible, a stiptic or caustic to promote the coagulation of the fresh flow of blood; doubtless, the scrapings of the inside of new sole leather, on account of the large amount of tannin it contained, was the very best thing that could be applied. J. D. W.

For the Dental News Letter.

GUTTA PERCHA FOR DENTAL PURPOSES.

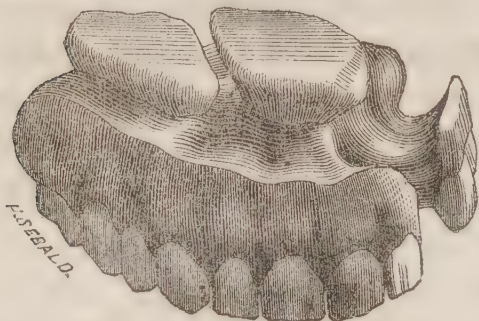
Our experience with gutta percha for dental purposes has not been very favorable, as it is not more easy on the gums than gold. In all the cases in which we used it, there was more irritation than when gold is well fitted; it produced the effect of excoriating the gum; but in some complicated cases, it may be rendered eminently useful. In the following case, it has served our purpose well, although it is not very durable, as the secretions of the parts destroy it in a few months, and requires renewing; but where the parts are changeable, it is of great value.

Cut No. I. represents a case where all the teeth have been lost by caries of the bones of the parts. In this case, the wisdom tooth of the right side, the left lateral canine and second molar only are remaining. The floor of the right antrum is entirely gone; also the vomer and all the turbinated bones, exposing the left antrum to view. The partition between the left antrum and the floor of the nares in this case re-



mains; and, as will be seen, leaves two immense cavities leading into the left antrum and nares. These cavities are to be filled, and teeth supplied, to establish the former arch; and as the alveolar process has been entirely carried away, it needs a large amount of substance to supply the deficiency. The manner by which this was effected, was by obtaining a wax impression of the parts, pressing the wax well into the cavities. Metallic casts are made as usual, for setting teeth; a plate of silver was swaged up and into the cavities as deeply as the wax was forced into them, resting on the anterior wall of the cavities, and extending over the palatine arch, as far as possible. A gutta percha plate is first placed into the plaster cast, before the metallic casts are made; this makes the silver plate the thickness of the gutta percha, less than the cavities in the case. Now another gutta percha plate is placed on the opposite side of the silver plate; both plates of gutta percha are long enough to meet each other around the silver plate, so that they may be thoroughly united. Now, a rim of silver plate is sprung from the wisdom tooth round to the lateral, and soldered to the silver plate, to which the teeth are also soldered, and then the whole

of the lost substance is built up with gutta percha to represent the gum and alveolar process. Now, to completely plug the cavities into the antrum and the nose, gutta percha is built upon the projections extending into the antrum and nose, to form knobs or buttons large enough, when pressed in, to support the entire piece.



purpose, and is one of those cases where gutta percha is eminently useful.

Cut No. II. represents the job completed; this has been used for over one year, and is retained in situ, and is used for mastication and articulation, but the gutta percha and the knobs require renewing occasionally. It is similar to an obturator with teeth attached, and serves a good

J. D. W.

For the Dental News Letter.

ON WELDING.

BY T. L. BUCKINGHAM, D. D. S.

MESSRS. EDITORS:—Different members of our profession have for some time past been trying experiments to see how solid gold could be packed. They have tried numerous experiments with gold prepared in various ways—sponge gold, gold foil as it is prepared by the manufacturers, and gold foil prepared to be annealed by the dentists.

The object of some of these experiments was not only to see how solid the gold could be packed, but also to test the adhesiveness of it. In reference to the adhesiveness, some very strong terms have been used; such as being as solid as gold would have been had it been melted and allowed to cool in a mass; or, to use a shorter term—welded together.

At a convention held in the city of New York, in August, 1856, I questioned the possibility of welding gold by pressure alone when it was cold; we were then told that although gold had not been classed with the welding metals, it was *the* welding metal; or that it could be welded more readily than any other metal.

I purpose, in this article, to endeavor to explain what is understood by welding. I shall not look for the derivation of the word, but shall confine myself to what I believe to be understood when the term is used. When we speak of two pieces of iron having been welded together, we intend to convey the idea that they are united in the same manner they would have been had the ends been melted, and then,

when in a fluid state, joined together and allowed to cool; or, that the parts welded, present all the appearances and properties of the other parts of the bar. There are three terms used to express the force that holds matter together—attraction, adhesion, and cohesion.

Attraction, or gravitation, is that force which acts upon all ponderable substances, and causes them to come together when it is not obstructed by some other force. It holds the detached masses of matter on the surface of the earth—the drops of water together, so that they form rivers and oceans—the ships on the surface of the water—the locomotive on the track, as well as the earth in its orbit, and the planets and stars in their orbits; and if there is a centre where the attraction of gravitation ceases, it is beyond our conception.

Adhesion is a term used when two bodies are brought in close contact, and they adhere together; as when two pieces of wood are united by glue, the glue adheres to each piece, so that they become as firmly united as they would be had they grown together.

Cohesion is where particles of a similar substance are united so that the particles cannot move, or, if they move, it is to a very limited extent; but even where the particles are held firmly together, they do not actually touch each other, but are some distance apart.

Before we go further into this subject, it is necessary to understand how, or of what, masses of matter are composed.

Masses are supposed to be composed of particles, or atoms, which were by some thought to be infinitely divisible; but the opinion generally received at the present time is, that although the atoms are immeasurably small, still they have a definite form and size, and they cannot be divided or changed, but remain constantly in these ultimate atoms. Atoms of a similar substance have a natural attraction for each other, so that when they are brought close together under favorable circumstances, they become united; but, in thus uniting, the particles assume a certain definite arrangement, and although some few substances, under certain conditions, present two or three different appearances, still they are always found in one or the other of these forms, and the particles cannot be made to assume the form of other substances. This definite arrangement of the particles forms the basis of chrystalography, and as all simple substances, particularly the metals, have more or less a crystalline form, it may be well to examine what is supposed to produce it.

It has been supposed that this definite arranging of the particles is produced by magnetism, which polarizes the particles. This appears to me to be the most rational theory that has been advanced; for we

find, in the particles arranging themselves, they do not occupy the least space they can be crowded into, but there are left interstices between them. We know this to be so, by substances occupying less space in a fluid state than they do in a solid. If we take water, for an instance, at $39\frac{1}{2}$ degrees, it is at its greatest density; from this point it begins to expand, until at 32 degrees it becomes solid, when it is one-ninth greater in bulk than it was at $39\frac{1}{2}$. This is not the case with water alone, many of the metals follow the same rule. If we throw a piece of solid iron, gold, silver, zinc, or lead, into a mass of the melted metal, it will float on the surface, thereby showing that it has less specific gravity when it is solid than it has when it is melted.

This expansion takes place when the metal is changing from a fluid to a solid; after that it follows the general law, expanding by heat, and contracting by cold, or when the heat is reduced. Now what causes this expansion? It would naturally be supposed that when particles of matter move freely around each other, they would be further apart than when they become fixed. We can only explain this change by supposing that when the particles become polarized, then the positive point of one would attract the negative point of its neighbor, so that they would become arranged in a definite form, and by different substances arranging themselves differently, they would present various crystalline appearances. It is not necessary, either, that the particle should be perfectly free, or that the substance should be in a fluid state, for the particles to arrange themselves in this definite manner. We know that by hammering or rolling metal, it becomes hard and brittle, and then when we heat it to a degree very much below the melting point, it is again rendered soft and tough. We can only explain these changes by supposing that, in hammering or rolling, the particles are forced out of their natural position, and then, by heating, they are either re-polarized, or liberated sufficiently to allow them to re-arrange themselves.

Let me now examine the process of welding. Perhaps I will not be able to explain it very clearly, but I will endeavor to give my idea of the process, and what I understand by the term. We have but one metal that has the property of welding to any extent—iron. I am aware that most of the books on chemistry state that platina will weld, and I have no doubt but it will, if we apply that term to the union of the particles which takes place in the process it undergoes in preparing it. In that process, after the platina has been thrown down from the solution, it is subjected to a very high heat for several hours in a furnace, the particles then, by being forced together, are made to adhere, so that by heating and hammering it becomes solid.

In welding iron, we know that the bars are first heated to nearly the fusing point; then, while in this state, they are placed together and hammered so as to make the particles unite; here the union appears to be the same as it would have been had the ends been entirely melted, then joined and allowed to cool. Sir Humphrey Davy explains the process by supposing that the surface of the bars becomes softened, or partially melted. They are then in a condition to allow them to unite. But in no case do metals unite without the aid of heat, or by pressure alone.

Now, how do we make pieces of gold unite together by merely packing them with an instrument? The only way I can explain how this is done, is by supposing that we force one piece through another, and bend and lap the different layers together, so that the pieces become so interlocked, that they present the appearance of a solid mass, but yet they are not really united together. Let me try and illustrate what I mean. If we were to take a number of sheets of any metal, (allowing them to be as thick as writing paper,) and lay one on the top of another, and then take some pointed instrument, having one or more points, and go all over the surface, forcing the points through all the sheets, we would have these sheets so completely united together that it would be impossible to separate them, and yet we could not say they were welded. The above, I think, will explain the way gold foil is held together after it has been packed in a cavity. We know it is necessary to have a rough surface, and to pack it with a rough instrument, to make it adhere together, and when the surface is made smooth, it is necessary to roughen it again if we want to pack more upon it. Without doing so, we cannot make the pieces adhere.

To explain how crystal or sponge gold is held together, it is first necessary to understand the shapes of the crystals. When examined under the microscope, the crystals appear to have one large crystal, and small ones radiating from it in every direction; these have smaller ones, and these again have still smaller; in fact, the crystals become so small that they cannot be defined by the microscope. Now, we can easily understand how a mass of this kind could be made to unite together by pressure. If we were to take some very fine wire, and cut it into short pieces, say an eighth of an inch in length, and then put these pieces into a cavity, and press upon them so that they would be bent and interlocked together, they would then be so united that it would be impossible to separate them.

The views above given may be presented somewhat imperfectly, from the haste in which they were written, but I trust they will be intelligible.

For the Dental News Letter.

ON FILLING TEETH AND THE MATERIALS USED.

BY J. LEE, M. D., D. D. S.

MESSRS. EDITORS:—Until a short time back, I had no idea that adhesiveness, i. e. that quality which enables us to weld pure gold by pressure, was by many dentists considered disadvantageous. I have been working gold for thirty years; for the last twenty, I have devoted myself to dentistry; I have worked the gold of but few manufacturers. I commenced with John King's, then Marcus Bull's, and, since his time, Charles Abbey's. The gold of these manufacturers united readily, by proper pressure—not carrying too much before your instrument. This I regard as the great secret of good plugging. Once I worked the gold of a New York manufacturer; I found it difficult to *weld*, and liable to tarnish; I attributed its bad qualities to copper alloy. Had it not been for the adhesive quality of my gold, there were many cases of decay in front teeth I should have had to pass by and leave to rot off.

I procured at one time from you a small quantity of crystal gold; I used it successfully, but I found its use troublesome; neither could I see any advantage it had over gold foil. I could perform with foil anything claimed for crystal gold. I, however, keep the article, but make it myself; it is easily made with us; we are in the midst of gold mines. When the gold is taken from the mills, where it is collected by mercury, the mercury is squeezed through a buckskin bag. We have then a pasty amalgam, consisting of one part gold, and two parts mercury, by weight. I make this amalgam into cakes of a convenient size and shape; dissolve the mercury by nitric acid; when the acid ceases its action, work well with water; again with water, having a small quantity of pearl ash to neutralize any remaining acid; boil in clear water, to remove the nitrate of potash. You have only then to anneal in a platina pan, and you have the best quality of crystal gold—pure, and at a low price.

On the subject of tin foil, I would say its value has neither been understood nor appreciated by the profession generally. To justify my remark, I would call the attention of your readers to page 77, of R. Arthur's little work on adhesive gold foil. He, there speaking of tin fillings, says: "he has often seen tin plugs preserving teeth, when teeth plugged with gold, in the same mouth, had failed." He attributed it to the comparative ease with which a tooth could be plugged with tin. I would respectfully differ from Dr. A. I had noticed the

same thing in my own practice, and that of others, some fifteen years since, and I have diligently experimented with tin. My conclusion is, that the oxyde of tin is a curative of the gangrene of teeth, and more especially, of that form termed *white rot*, so frequently attacking child-bearing women, and often seen in the Irish and Scotch immigrants, a few years after their arrival in this country. In teeth of this character, it is futile to attempt arresting their decay with gold; with tin, I have met with some success.

Here is another form of decay: The child of 8 to 12 years is sent to your office; teeth rapidly decaying—you commence operating—it is difficult to say when you have extirpated the decay—no difference in color, and but little in consistency. Such teeth, I fill with tin; it matters not if it goes in damp; it will soon be damp from the decay; let it remain six or twelve months; remove the fillings, and you will find a dark, hard surface; clean it off—the dentine under this is hard—fill with gold, and you secure the tooth. The same tooth, if first filled with gold, *in the best manner*, will continue to decay, and I have seen them with a ring of decay round the plug,—the plug itself perfectly solid.

I regard Clark's cylinders a great improvement in handling gold for rapid filling. I have not the tact necessary to use them in all cases. In using foil, I confine myself to one number, No. 6. It is thin enough to fill the smallest cavity, and by rolling into cylinders, makes a solid plug for the largest in the grinding surfaces of the molars.

I do not admire submarine plugs, yet it is scarcely possible to dry out a half-filled cavity. With Clark's cylinders, saliva gives but little trouble, with such expedition can a large cavity be filled. The mucous secretion is more in the way when the cavity is near the gum. Dry perfectly, and work rapidly,—for plugging teeth is like many other things:

“If it were done, when 'tis done, then 'twere well
It were done quickly.”—*Macbeth*.

I never could see any good reason for keeping a mouth stretched, and filled with rags, for half an hour, while an awkward manipulator lays down one instrument, picks up another, trying now this, then that, and after finding them wholly unfitted for his purpose. An experienced operator, on the contrary, having made his excavation, prepares his gold, lays to his hand the proper instruments, and then the operation must be intricate that will take more than five minutes to secure; the finish can be put on at leisure.

MATERIALS USED FOR FILLING TEETH.

Read before the Pennsylvania Association of Dental Surgeons, October 20th, 1857.

BY C. N. PEIRCE, D. D. S.

GENTLEMEN:—In the fulfillment of an appointment made by the President, at the last stated meeting, I have decided to offer you a few thoughts on the materials used for filling teeth.

The four years during which I have been practicing dentistry, have been occupied almost exclusively in efforts to preserve the natural teeth. The interest I have felt in this branch of my profession, has induced me to request of those with whom I have accidentally met, an opportunity of viewing the operations of other members of the profession; in so doing, thoughts have been suggested, which, if they should prove neither entertaining or instructive to any of you, I shall have had the advantage of putting on paper, and also the opportunity, if false, of having them disproved.

The principal object which all seem eager to attain, in filling teeth, is to supply the parts destroyed, prevent further destruction, and render them more efficient in mastication. The best material with which these objects can be accomplished, we will consider. To be successful in our operations, one thing is essential; the material used must be something that can readily be adapted to the walls of the cavity; thus preventing foreign substances from coming in contact therewith, or permeating the filling to the bottom. The substance which meets with general approbation, for the majority of cases, is *gold foil*, annealed or unannealed; but as the two differ so much in their nature, I trust a few words, respecting each, will not be out of place.

My experience has been such as to make me prefer, in most cases, unannealed foil; the reason for this preference is the tendency of the annealed to harden under the instrument, rendering it very difficult to adapt it to the inequalities in the walls of the cavity, failing to do which, makes a very imperfect filling, and one that does not prove serviceable to the patient. In a number of instances, where I have seen fillings of both annealed and unannealed gold, in the same mouth, and by the same operator, where the chances for a good operation were equal; while I have found the annealed quite imperfect, the unannealed has been in a good condition. It is true, that most of these operations have been performed by gentlemen of limited experience; but the fact does not at all disprove the statement that unannealed foil is much more readily adapted to the cavity.

It has been argued by those favorable to annealed gold, that fillings

thus put in, become so welded together, that they can readily be hammered into plate, or drawn into wire, all of which is true; but it is none the less true, that the same can be done with fillings of unannealed gold, when the same care and time is taken in putting them in. In confirmation of which, I will exhibit to the association four gold fillings, of both the annealed and unannealed, one of each I have hammered into a thin narrow plate, having no more difficulty in hammering out one than the other; the other two I have preserved in their original shape, as taken from the cavity in which they were condensed. That annealed foil can, in most cases, in the hands of a skillful operator, be used as successfully as any other, I do not doubt; but that it is better, or equally as good, with the same amount of labor, my experience has not taught.

The crystal or sponge is another form in which gold has been used by many, and of which I have but little to say, having used but half an ounce, and six months afterwards, would gladly have given a week's work if I had never made its acquaintance; for every case had to be re-filled, on account of the destruction of the dentine surrounding the filling.

As every practicing dentist occasionally meets with a case in which, for some reason, it is deemed inadvisable to use gold, I trust you will not consider a few moments devoted to the substitutes to which he has recourse, out of place. The one which approximates in quality to the material already spoken of, is tin foil, a substance much underrated, for I am sure it is capable of doing good and efficient service in preserving the teeth. I have frequently seen good fillings of this article, which, from the patient's account, had been well used for ten or fifteen years, and which statement I do not discredit. I would, therefore, urge it upon the younger members of the profession, who frequently have patients unable to pay a compensating fee for a gold filling, the superiority of tin foil over any other of the cheaper articles, for filling cavities in the molar teeth, which, if they are not on the masticating surface, will be nearly as serviceable as gold. But in all cases where it is necessary to remove the nerve, let care be taken to thoroughly fill the fangs with gold previous to filling the crown with tin. Though I have a good opinion of it, I would rarely put it or any other dark substance into a front tooth, for I believe it to be the duty of the dentist, not only to preserve the teeth of his patients, but also their beauty, or so much of it as is dependent upon his operations, providing it can be done without sacrificing utility.

The superiority of tin foil over amalgam, wherever it can be used,

cannot well be overestimated. My objection to amalgam is not based upon the systemic effects, periosteal inflammation, spongy and unhealthy appearance of the gums which it is said to produce, reports of which have been published in the *Dental News Letter*. Such difficulties as the latter have often occurred in my practice, but I have always attributed them to other causes; for not unfrequently do they appear when there is no amalgam to be found in the mouth. But that they should oftener be found where the amalgam predominates, is not strange, nor is it any evidence that amalgam is the exciting cause; for when used so indiscriminately, it is evidence sufficient that the operator is either dishonest or unskillful; in either case, disease is often the result of his manipulations. When I have read accounts of such pernicious results arising from amalgam fillings, I have thought, if the whole truth were known respecting them, we should find, that either disease had existed prior to filling the teeth, or the pulps had been destroyed without properly removing and thoroughly filling the fangs with gold. In either case, that such result must follow, independent of the material used for filling, is certain. That there are many attempting to practice our profession, who, through ignorance or dishonesty, resort to such expedients to save temporary labor, we are all aware; and knowing this, I think we should be careful to place the fault where it is due.

But for the objections: many of the amalgam fillings I have met with have been very imperfect around their margin or walls of the cavity. Doubtless, when the operator had completed them, to all appearances they were perfect, but this defect had taken place afterwards, as the amalgam hardened. An idea prevalent, and one that is often advanced in favor of its use, is, that it can be put in with so little pressure, only needing to be burnished down with a blunt instrument, and hence much better adapted to very frail teeth. Now, it is where the operator has been unable to put sufficient force upon the filling, that this imperfection exists, and I am much inclined to the opinion, that by the moderate pressure, the free mercury, instead of being forced entirely out of the cavity, as it should be, is only thrown against its walls, and much of it is afterwards absorbed by the dentine, rendering it dark, and leaving the filling imperfect, where it needs most to be perfect. A patient in whom these results were fully realized, was placed under my charge on the second of this month, in the person of a lady about thirty years of age. She had been suffering with a swollen face, and much soreness in one of her teeth. On examining, I found in her six superior front teeth seven amalgam fillings,

having been placed there less than six months since, and which, with the exception of one, I found so completely in the condition above described, that they were readily loosened by passing a small instrument in at the side, and it was evident, from their appearance, that little or no pressure had been applied in putting them in.

But I must not omit to mention, that there was no evidence that the sufferings of the patient were either caused or increased by the use of amalgam, as they were readily attributed to another source. The left lateral incisor having been filled without properly removing the dead pulp and filling the fang, had occasioned considerable periosteal inflammation, which, with two bicuspid roots, were sufficient to occasion all. The evils attributable to the amalgam in this case, were the discoloring of the teeth, and its inability to arrest the decay. If it be true, that these results accrue from want of properly consolidating the filling, and thereby removing all the free mercury, it certainly destroys its value for very frail teeth, where it is considered most efficient. Therefore allow me to suggest, for the filling of such teeth, the more frequent use of "Hill's Stopping." I have used it in many cases where I am well satisfied it is more serviceable than amalgam would be. It was only a few days since, I met with a lady from the country, a former patient of Dr. Dixon, for whom he had treated a bicuspid tooth for periosteal inflammation. After having filled the fang, for want of time to put a good gold filling in the crown, he used "Hill's Stopping," requesting her to come at the earliest opportunity, and have it refilled with gold. She is still wearing the filling, which he put in four years ago, and the tooth is in as good condition as the day it was used. I have a number of patients who are wearing it in large cavities on the approximal surfaces of the teeth, which were so loose when filled, that nothing solid could be put in them, still they were of some service, and they were unwilling to lose them.

In conclusion, let me add, that as my experience increases, the more satisfied I am, that the cases where gold in some form is not the most suitable, are very few; and that, where amalgam is preferable to any other material, are seldom met with.

For the Dental News Letter.

PROCEEDINGS OF THE NEW YORK DENTAL SOCIETY.

TO THE EDITORS OF THE DENTAL NEWS LETTER:—I take pleasure in furnishing you with a brief report of the meetings of the Dental Surgeons of this city, believing it will not prove uninteresting to learn that it has been decided to have a series of meetings for mutual benefit,

and that it is now determined to form a new society in New York, and the meetings will be initiatory to that end; and I have no doubt that all interested in this movement, will have reason to feel proud of the usefulness of the Association.

The meetings are to be held twice a month.

Yours, in haste,

G. H. PERINE.

At a meeting of dentists in New York, held at 57 Bond Street, on Wednesday, November 18th, at 7½ o'clock, P. M., Dr. G. S. Hawes was appointed Chairman, Dr. J. G. Ambler, Secretary.

The following resolution was adopted:—

Resolved, That we deem it expedient to have a series of meetings for the interchange of views on subjects relating to the profession.

On motion, it was

Resolved, That a committee of one be appointed to make the announcement, and Dr. G. H. Perine was chosen.

Accordingly the following announcement was made:—

A meeting of the Dental Surgeons of New York and vicinity, will be held at 57 Bond Street, on Wednesday, December 2d, at 7½ o'clock, P. M.

The object of the meeting is to associate for the promotion of the individual as well as the general interest of the profession to which we belong.

The invitation is intended to be general, and it is hoped that no one will feel himself neglected, in case he does not receive a copy of this circular, but that each and all will interest themselves in the movement, and give it their hearty co-operation and support.

Agreeable to the call, a meeting was held at the above-named place, on Wednesday, December 2d, at 7½ o'clock, P. M.

Dr. F. H. Clark was appointed Chairman, and Dr. J. G. Ambler, Secretary.

The minutes of the previous meeting were read and approved.

After some discussion, the following taking part:—Drs. Ballard, McIlroy, Perine, Roberts, Dodge, Covell and Allen, it was, on motion of Dr. Covell,

Resolved, That a committee of five be appointed to present a Constitution and By-Laws, consisting of Drs. Covell, Ballard, Perine, Allen and Clark.

On motion, adjourned to meet at the same place, on Wednesday, December 9th, at 7½ o'clock, P. M.

Pursuant to adjournment, a meeting was held at 57 Bond Street,

Dr. L. Covell was appointed Chairman, *pro tem.*, and Dr. J. G. Ambler, Secretary.

The minutes were read and approved. The report of the Committee on Constitution and By-Laws was read and adopted.

Dr. Castle thought the Constitution too democratic. This gave rise to some discussion, in which Drs. Ballard, Perine, Clark and Ambler took part.

Finally, on motion of Dr. Perine, to reconsider the report of the committee, was adopted. And it was taken up section by section, and re-adopted without debate. The signatures of the members having been appended to the report, the election of officers was proceeded with.

Dr. J. G. Ambler was elected Secretary, and Dr. W. B. Roberts, Treasurer. The election of Chairman to take place at each meeting.

Business Committee, Drs. C. W. Ballard, John Allen and L. Covell.

Dr. Perine proposed for the evening discussion, the "Treatment of Fangs," upon which Drs. Perine, Ballard, Hawes, Roberts and Clark expressed their views.

Subjects for discussion, at the next meeting, were proposed, and the meeting adjourned.

New York, December 12, 1857.

For the Dental News Letter.

EXCAVATORS.

BY T. L. BUCKINGHAM, D. D. S.

MESSRS. EDITORS:—I have for some time past been using excavators made differently from any I have seen. They may not be new to all; others may have been using the same kind, but I have not seen them described, nor have I seen them at the instrument makers or dental depots. The improvement I allude to, is made on what is usually called the hoe-shaped excavator. These are generally made by filing the end of the instrument round, and then bending it either in a short curve or a sharp angle; the inside of the curve is then flattened, and the outside is filed or ground, so as to make a cutting edge.

If, instead of making the end of the instrument round, it is made *triangular* and then bent on one of the sides, so that the inside of the curve shall be flat and have a sharp edge running along the outside, and afterwards brought to a cutting edge on the point, as the ordinary hoe-shaped excavator is, the instrument has several advantages over those generally in use. Besides the cutting edge on the end, we have an edge on each side, similar to the ordinary scaler; these edges may be

used for scraping off the sharp edges of enamel around the cavity; and they are sometimes useful in cutting away the caries and softened dentine. The edge on the back of this instrument (or on the outside of the curve) can be used as a chisel where it is necessary to cut from us. These points I bend in a regular curve, some large, and others very small. I never bend them at right angles, as is sometimes done. A curved instrument, if properly tempered, will spring all along the curve; but where there is an angle, the spring will cease at it; and if too much power is applied, the instrument breaks near the angle, although it may be thicker there than at some other place.

I use the instrument I have described not only for excavating but also for scaling; I very seldom use any other for cleaning teeth; they are also useful when finishing a plug, as many times parts of a filling can be scraped off, when it would be very difficult to file them away. These instruments may be made very narrow across the cutting edge, so that they can be worked in a space made by a very thin file, and yet, if properly made, will have sufficient strength for ordinary use.

For the Dental News Letter.

CASE OF DISEASED ANTRUM.—DIFFICULT DIAGNOSIS.

BY J. D. W.

A medical gentleman, from the south, called to consult us relative to a discharge of pus from the left nostril, of five or six years' standing; he was unable himself to determine the origin of the pus. The case had been examined by many physicians and dentists at home, without arriving at a satisfactory conclusion. Before he saw us, his case had been examined by two dentists, and two eminent surgeons; the dentists decided that the pus originated from the two front incisor teeth, whose nerves had been dead for years; the first surgeon, although he believed it to be a diseased antrum, declined to operate on it, but the second decided to do so, by drilling the base of the antrum, from the location of the second bicuspid tooth, which had been extracted for some years. The patient recollected that he had suffered considerable pain at the time the tooth had been extracted, but was not certain that he could date the discharge from the nostril from that time, although he believed it to have originated from the tooth or the inflammation attending it.

When the second surgeon decided to operate on the antrum, the patient hesitated, because the weight of opinion was so strong against him; they decided to refer the case to us, and perforate the antrum, or

leave it to take its course. We remarked to the patient, that if two surgeons agreed that it was diseased antrum, it was useless for us to hazard an opinion, but he insisted on it. It had been believed by all the dentists who examined the case, that the discharge was due to the front teeth, but, inasmuch, as these teeth had the usual fistulous openings in the gums, it was not probable that there was also a discharge into the nostril; but, to render the matter certain, we examined the floor of the nares well with a speculum, similar to those used for the ear, and found that all parts of the nares and the turbinated bones were sound, and we decided it to be unequivocally a case of diseased antrum, and advised the patient to have it perforated at once. He left us, and returned in an hour, in the greatest ecstacy, holding out his hand, and exclaiming, "we have found out the cause of all my distress; there was as much pus discharged from my antrum as I could hold in my hand."

For the Dental News Letter.

TEMPORARY SETS.

It has become a practice with many dentists to supply their patrons with a temporary set of teeth, while the gums and alveolar are changing into a permanent condition suitable for a permanent one.

Two reasons are given for this course—first, to gratify their patients; second, the more perfect preservation of the expression of the mouth and face. Is the latter reason, practically speaking, true? Will not the change be greater at the end of five years, than if the old practice be followed, of giving six months or a year for the mouth to prepare itself for the reception of a permanent set of teeth? From my limited experience, whenever a temporary set has been supplied, the change in the jaw has not been so great during the first year, but has continued to change for a number of years; so that ultimately the loss has been greater, and the change of expression greater.

There is also another objection. A plate put into the mouth over unhealed gums, prevents healthy action, and keeps them in a soft and spongy condition, unsuited for a basis for a permanent and useful set of teeth.

If it be true that temporary sets be a permanent injury to the jaw, they should be immediately abandoned; so that the unfortunate victim to artificial teeth shall not suffer a permanent injury from wrong advice.

T. H. B.

Portland, December 17, 1857.

THE DENTAL NEWS LETTER.

JANUARY, 1858.

PAIN IN DENTAL OPERATIONS.

Every creature shrinks from pain, from the lowest to the highest organization. How important is it, then, for every dentist to exert the utmost care to avoid exciting pain in the various operations on the teeth of his fellow-creatures. A dentist's qualifications are rated by the public for the discharge of his duties, proportionately as he is tender in his operations on or about the mouth. We hear it constantly remarked "O, he is so tedious; I was tired to death before he finished one tooth." We are aware that this complaint may often be made by the impatient long before sufficient time is spent on a case to do it justice, but it is no excuse for being unnecessarily slow. All learn to judge for themselves whether an operator is slow or fast in his operations, and they do so, sooner or later, with some degree of justice. About a year ago we sent a patient to a friend because we had not the time to give them attention, as they were about to leave for a foreign country. Their teeth were exceedingly sensitive, and the dentist was so tedious in his treatment that they were obliged to abandon the operations before they were finished. "A good mechanic uses sharp tools." We once operated for a business man; and when we were done, he inquired what the charge was. We told him five dollars. He replied "that it was worth more than that in economy in time." This sentiment runs through all the affairs of practical life. To operate without exciting undue pain is the bounden duty of every dentist; not only for the credit of himself, personally, but for the profession generally. From the careless regard in this respect, the stoutest hearts shrink from the operations of the dentist—the name of dentist cannot be mentioned in a company without a shudder. The people are more reasonable than the dentists generally suppose. It is not the duty of a dentist to inflict more punishment in the operation of extracting or plugging a tooth than will result from refraining from either operation. Palliation in either case is the lesser evil, where it can possibly be effected. A captain in the United States Navy informed us, a short time ago, that he had been so severely punished in early life, by a dentist operating upon his teeth, that he neglected them for more than twenty-five years, because he could not approach a dentist until he

had lost nearly all his teeth, so great was the impression on his mind, and which all his good sense could not overcome.

A day does not pass but that we hear complaints of dentists inflicting so much pain in their operations, and especially in those of plugging teeth, that patients defer every thing until necessity or extreme suffering impels them to it. It is very extraordinary to us that so many dentists neglect to palliate sensitive dentine before plugging—good operations are seldom effected, when persisted in under such circumstances. In the first place, the decay is not removed from the cavity; in the second, the gold is not packed solid into the cavity, or in a sufficiently deliberate manner to insure good work, for while the patient is on the *qui vive* for a pang, the dentist cannot manage the case with proper care; and, thirdly, it causes a fear and dread of our operations that affects the mind of the patient during life, or favors a willingness on the part of the patients to consent to the use of all sorts of paste or soft filling, to avoid the fancied pain in using gold. It is a very easy matter for the dishonest dentist to persuade a patient to permit their teeth to be plastered up with soft filling, when the cut of the instrument in cleansing excites so much pain. And we are sorry to see so many of our dentists, who occupy a high position in the profession, resorting to a similar subterfuge. This part of our practice must be modified before our profession can gain a strong hold upon the confidence of the intelligent public. We have at all times patients under treatment, whose teeth have to be replugged for reasons which we have named above; and as the teeth continue to lose their plugs every few months, or the teeth break down, they are considered frail, when, in reality, it is the work that is frail. If it were not that we might earn the charge of egotism, we would furnish a large amount of practical matter on this subject, but we will leave it to the serious consideration of the younger members of the profession.

J. D. W.

American Dentists abroad.—We have noticed from time to time the location of American dentists in foreign countries, also those who, though not born in this country, yet received their professional education here; and we have now to add to the list the following:

Mr. Rosendo Arteaga, who is located in Caracas, the capitol of Venezuela. He informs us that he is a native of Cuba, but studied his profession in New York, and adds, "dentistry is not very highly appreciated here. Barbers used to plug front teeth with amalgam." We are also informed that Mr. W. Childs, of Leeds, England, received his dental education in the United States.

J. R. M'C.

Advice to those who use Amalgam.—Under this caption we published a short advisory article to those who used amalgam, in the April No. of the *Dental News Letter*, believing that it would do some good, and we have not been mistaken. The last No. of the *Journal* contains an article from our distinguished friend, Dr. Townsend, which contrasts strongly with his paper on the use of amalgam, in 1855, and looks very like backing out of a professional error which he had been publicly pledged for. Had he taken a middle ground in his first article, he would not now have so long a road to retrace, and doubtless this would have been true, had it not been for that “professional friend in New York.” We gave, in our article, such facts as we believed useful to the profession, and to guard the inexperienced against its indiscriminate use; and all we said then we still hold to be true; if we found it used only in such cases where gold could not be used, we would find no fault. That mercury acts differently on different temperaments, when it is used as a medicine, there remains no doubt. We have two cases under treatment now, where a large portion of the inferior maxillary has been lost by the use of mercury. Some persons cannot be salivated at all, while others are affected by the smallest quantity. We are now operating for a patient who had both of the inferior wisdom teeth plugged with the new amalgam about six weeks; it had not turned black; the entire buccal surfaces were plugged. The whole remaining surfaces of the enamel were whitened, as if acid had been acting upon them, and the gums and cheeks presented a thickened and whitened appearance, as if a strong stimulant had been held in contact with them. One week from the time we saw these cases, one of the cheeks run into ulceration; the plugs were removed, and in ten days the parts resumed a normal appearance, but the whiteness of the enamel remains. If this was no objection to its use, and it could not be proven to those who are blind to its specific effects upon the system, or the parts locally, its liability to extreme discoloration of the teeth would be a sufficient objection to its use by the accomplished dentist. No matter how well a patient may be satisfied with it at the time it is used, they finally become dissatisfied. The blackest teeth we ever saw, were those which had been plugged with the new amalgam; but, as Dr. Townsend remarks, “there are cases which occur in every man’s practice, where he cannot use gold, or any material which requires force to make it pack, and yet it may be very desirable to save the tooth for purposes of mastication. In such cases, I deem it the duty of every honest dentist to use such material as he thinks will make the organ useful for the longest period.” This is the point on which all

fail to form a correct opinion, when only a mechanical view is taken of the case; *honest* intelligence of the dentist, for the patient's good, takes a wider range.

J. D. W.

The Dental Movement in England, and their Journals.—It is probably well known to most of our readers that the advance dental movement in England, as evidenced in the establishment of a "Dental College" and the organization of an "Odontological Association," produced some differences of opinion, and some degree of antagonism, particularly on the subject of dental education by chartered institutions, which could not be other than a subject of regret to all having the true interests of the profession at heart.

In a former notice of this subject, we expressed the hope that these difficulties would be overcome, and that *all* would congregate upon a common platform, and heartily co-operate in the important work, which each body, in its own way, has been striving to accomplish, viz: professional improvement; and we rejoice now to notice, in the late numbers of the two journals, that the editorials are in a more conciliatory spirit, and are well calculated to harmonize all differences, and to bring about a better feeling, and we hope, a perfect unity of action among the two divisions of the profession in England.

Both journals are able and high-toned, and must render incalculable benefit to the profession at large, in the advancement of the cause and the elevation of the professional character of dentists in England.

J. R. M'C.

Obituary.—Dr. W. F. Chamberlin, of Manchester, N. H., departed this life November 26th, 1856, after an illness of six weeks, aged 28 years.

The deceased commenced the study of dentistry at an early age, and was thoroughly taught in all its branches, and was in full practice for nearly nine years prior to his death. We take the following extract from a printed discourse on his death, as illustrative of his character and qualities:

"Dr. Chamberlin was a man whom it would be difficult to overpraise. His character was so gentle and so retiring; his virtues so transparent, and his faults so carefully guarded, that to those who knew him as I did, there seemed nothing in him that was not true and holy. And to this judgment many minds will lean, for his virtues were no less appreciated than his character was loved. He was a man whom you would have to seek, to know thoroughly. And so, while he was to most merely a man of winning ways, and an able professional helper, to the few who knew him well, he was one of the purest-minded young men in our city."

Dental Surgery.—There are many diseases, as are well known, that come under the notice of the dentist, which, from a want of experience or confidence, he is accustomed to refer to the surgeon. Now, we cannot see why such cases—those which belong to, or are connected with, the dental apparatus—such as disease of the antrum, the variety of tumours, necrosis, exostosis, salivary fistula, caries and the proper administration of anæsthetic agents, &c., should not be treated by one having previously had a dental education; or, in other words, why one or more dentists in our large cities should not prepare themselves expressly for, and give their undivided attention to, the treatment of such diseases, to whom their brother practitioners could refer such patients, with the assurance that they would receive proper attention and the best treatment.

In this connection, it affords us much pleasure to refer to Dr. James E. Garretson, of 42 North Sixteenth street, Philada., who, after a long and thorough course of preparation and much practice, is now, we are assured, fully competent to the treatment of all such diseases.

We trust he may be sustained in the line of practice he has adopted.

J. R. M'C.

Dr. N. B. Slayton, of Madison, Indiana, in a communication to us, suggests the use of "*Hydraulic Cement*" as a substitute for ground feldspar, in getting up "cheoplastic" work, and says: "I have found it—well sifted and mixed with plaster of paris, in equal parts—far superior to spar, as it becomes much harder and stands heat much better;" and again: "It is superior to sand in all kinds of work where heat is used."

OBITUARY.

On Tuesday, December 1st, at 8 o'clock, A. M., of consumption, Mr. Samuel Feering, in the 44th year of his age.

The subject of this notice was connected with the Philadelphia house of Jones, White & McCurdy, in whose employ he had been for some eight years, and was therefore well known, and will be remembered by most of those in the profession dealing at that place.

From early life, his health had been delicate, from a consumptive tendency, and it was a matter of surprise with many that his life had been so prolonged. He was a kind husband, an indulgent father and a true friend, faithful and correct in all the relations of life. His loss will be sincerely mourned by all with whom he was connected, either by the ties of blood or association.

J. R. M'C.

Dental Societies.—We notice with pleasure the formation of the "South Jersey Dental Association," which was organized last July with fair prospects for permanency and usefulness. They have our best wishes for success.

We received some time since a circular calling a meeting of the dentists of Northern Ohio, to meet in convention in the city of Cleveland, on the 3d of November, to organize "a society for the promotion of dental science, for fraternal intercourse, and for the advancement of the general interests of the profession." Such convention, we are informed, was held, and "was attended by a respectable number of dentists, who seemed deeply interested in discussing the various subjects brought before the convention. No society was formed."

After the election of officers, discussions on professional topics occupied the attention of the meeting, which was continued till the second day, when the convention adjourned to meet in Cleveland in May next.

We have likewise received the following:

NEW YORK, November 20th, 1857.

"A meeting of the dental surgeons of New York and vicinity will be held at No. 57 Bond street, on Wednesday, December 2d, at half-past seven o'clock, P. M. The object of the meeting is to associate for the promotion of the individual as well as the general interest of the profession to which we belong."

Not having been favored with any report of the meeting here called, we are unable to say what was done, but hope the movement has been well started, and will be well sustained. Surely there is abundant material in New York City to build up a useful organization, which we sincerely hope may be the result.

J. R. M'C.

[Since the above was written, we have received a report, which will be found in our pages.]—ED.

We have just received the following, which we cheerfully insert.—ED.

Subjects for Discussion.—The business committee appointed at the convention at Boston, would most respectfully present the following topics for discussion at the next convention, to be held in Cincinnati, in August next:

1. The best means of *securing* and *preserving* good teeth. 2. Treatment of exposed nerves. 3. Mechanical dentistry. 4. Filling teeth. 5. Miscellaneous.

"J. TAFT, C. W. SPALDING, C. A. HARRIS, E. TOWNSEND, B. LORD, *Committee.*"

New Lathe.—On cover will be found a design, with description, of a new dental lathe, portable and efficient.

EXTRACTS FROM THE DENTAL PERIODICALS.

BY J. R. M'C.

American Journal of Dental Science, for July.—In this number we find an article on “*Filling Labial Surfaces of Upper Incisors,*” by Dr. A. J. Volck.

The method proposed is so novel, that we give the article almost entire, as follows :—

“ I beg leave to submit to the profession the description of an operation, which, having been suggested by Professor Maynard, of Washington, I have tried in a number of cases and found of such importance, that I believe its publication in your valuable journal will be acceptable to the careful operators of the dental profession.

“ This operation consists in setting a piece of enamel in the cavity of a decayed tooth, when such a cavity is exposed to the sight, thereby avoiding the ungainly appearance of gold fillings in the front of the mouth. The only cases in which I have as yet applied this method were in cavities in the anterior surface of front teeth. It is done by fitting a piece of enamel into the prepared cavity loosely, walling it into the same by a continuous ring of gold foil. The narrower, of course, this gold ring can be made, the more perfect will be the deception. In the first operation of this kind that I attempted, the width of the gold ring is about equal to the thickness of a five cent piece ; even in this case, the improvement over the large gold filling which had previously disfigured the tooth, is striking, and made me hope for much satisfaction from future practice. Having since become more adroit in this operation, I have accomplished fillings in which the rim of gold is not thicker than a small main-spring. These fillings are barely perceptible to any but the closest observer.

“ In preparing the cavity for this purpose, pains are taken to have the walls perpendicular, and the bottom of it perfectly even and flat, avoiding, if possible, rounded edges, which would make the gold ring appear thicker than it actually is. In cases where the cavity is deep, it may be partly plugged in the common manner, and a bed thus formed on the bottom of the cavity for the reception of the enamel. The enamel must be fitted so as to correspond precisely with the shape of the cavity, having also perpendicular sides, and allowing sufficient room between it and the walls of the cavity for the filling in of the gold. Around the sides of this patch of enamel a small, barely perceptible, groove can be cut with a sharp file, as an additional security for the stability of the gold filling. To fasten this enamel patch in the cavity, my way has been to wrap around it a strip of No. 4 gold foil, of sufficient thickness to fill up the space between it and the sides of the cavity, leaving the strip wider than the enamel, so as to allow for condensing and finishing the plug ; this I passed gently into the cavity, assisting on all sides with a small and very thin plugger, so as to make the gold arrive with the enamel at the bottom of the cavity ; after it has been inserted in this manner, the gold plug can be condensed and

finished as any common filling. The best material for the enamel will be found to be the porcelain of which artificial teeth are made—a piece of common plate tooth of the proper color has answered to perfection. This enamel is easily finished down with corundum slabs, and polished with an Arkansas stone.”

British Journal of Dental Science.—In the number for June, we find a “*Contribution to Dental Surgery, by Spence Bate, F. L. S.,*” in which he relates several cases of abscess and tumors, and then makes the deduction that it is impossible for dentists to treat diseases of the teeth without a thorough acquaintance with surgery. He says: (The italics are our own.)

“Cases such as these clearly demonstrate the intimacy that exists between surgery and dentistry, and there can be little doubt but that if dentists would associate themselves more decidedly with surgery, the general treatment of these and similar cases must become a part of their speciality, *but this can only be done by an education that is not only equal to the circumstances, but one that shall be recognised as such by the medical profession generally; for any given specialty that is not admitted as such by the profession of which it is a part, must descend to the rank of an empiricism, and thus degrade its practitioners.*”

From this it appears that it is not sufficient that the “education” of the dentist shall be “*equal to the circumstances, but one that shall be recognised as such by the medical profession generally.*” The inference is therefore plain, that ability is nothing without the recognition of the medical profession.

The plain English of the whole paragraph is, that unless the “medical profession generally” should condescendingly extend their hand, and pat the dental profession on the head, and smile a kindly recognition of its mission and labors, it “*must descend to the rank of empiricism, &c.*” Be it understood, then, that the profession of dentistry, which has done so much for the alleviation of suffering, and the comfort of the human race, and possessing all the elements of usefulness, must go begging for an existence like a miserable mendicant, or a vile culprit, unless it receive the recognition of the “medical profession generally.” Now, to our mind, this is a contracted view, as erroneous as it is unjust. It is claiming for the medical profession what we are persuaded they are not willing or prepared to assume, and savors strongly of sycophancy.

In a word, then, education, ability, all necessary qualifications, no matter how laboriously acquired, or how ably demonstrated in practice, are insufficient without the paternal and *patronizing* recognition of the “medical profession generally.”

As the gentleman seems to entertain such exalted views of the medical profession, and of the wonderful comprehensiveness of the science, he will kindly permit us to offer the following prescription, which we think will meet his case admirably, and, we hope, result in a complete cure:

Rx.—A more correct and just appreciation of the importance and usefulness of the science of dentistry.

A more extended and familiar intercourse with his professional brethren.

Signa.—To be taken freely before the paroxysm comes on.

From same Journal we extract as follows:

*“Odontological Society of London —Monday, June 1st, 1857.—What is the cause of the Teeth being so much more liable to disease and early destruction than other organs of the body? By Mr. Robertson.—*The author commenced his paper by objecting to caries of the teeth being compared to that of bones, the one disease being extremely common, the other comparatively rare. He stated that the durability of the teeth greatly depended upon a healthy state of the constitution during that period when the teeth are being formed; but after they have been formed, and have made their appearance above the gums, the mischief that subsequently befalls them is not attributable to any unfavorable change in the constitution, but is due altogether to the effects directly produced by external agents, those agents being particles of food lodged in the fissures on the surface. The author contended that the enamel of tooth is an inorganic substance perfectly devoid of sensibility, and that the bony structure underneath is so devoid of feeling, that the destruction is not attended with pain or suffering; and stated that there is no analogy between the growth of a tooth and that of other bones, but that the growth both of the enamel and the bone of a tooth resemble that of inorganic bodies, being composed of lime and animal matter, which is thrown out by the pulp so as to enclose itself within a wall of bone, not unlike the oyster, which by a similar process encloses itself with its shell. And he contended that the tooth-substances when once formed undergo no further change. The tooth-pulp continues to the latest period of life to generate and throw bone upon the inner walls of the pulp-cavity, one layer being added to another, neither receiving or requiring further nutriment as other bones, and, indeed, as all other organized bodies do. The materials which compose the structure of a tooth—the enamel and bone—when once formed, depend as little upon nutriment for their future support as do stone, brick and plaster, used in the erection of a building. Both structures are upheld by the power of affinity, both require watchful inspection, and a similar mode of treatment is necessary to protect them from the chemical action of external agents.

“Mr. Robertson stated that the enamel is formed by a secreting membrane, that isolated spots of enamel are first deposited, which, with the increasing thickness of the part, coalesce and form a continuous layer. But that the coalescence in many cases is imperfect, and

hence pits and fissures are left. In these, the eroding agents collect, and the destruction of the tooth is commenced.

“The saliva itself has no injurious effect upon the teeth; it is the food which mixes with it, by which the mischief is occasioned.

“It was asserted that the attack is always made upon the teeth from without, never from within, and that the rapidity of destruction will depend upon the capability of the “interstices, pits, and fissures” to receive and contain more or less of the destructive matter.

“The fact that all practitioners agree upon the treatment to be adopted in those cases where the pulp is not exposed, viz.: the removal of the softened tissue, and the substitution of gold for the lost part, Mr. Robertson considered as evidence in favor of his views, both as respects the nature of the disease, its cause, and the inorganic character of the dental substances.

“He adverted to the operation of filling the pulp-cavity of the body and roots of a tooth after destruction and removal of the pulp, and stated that after many years of experience, he had not met with much success from filling when the membrane had become exposed and inflamed.

“In conclusion, the author alluded to microscopic research, as applied to dental structure and pathology, and stated that he was not aware that much light had been thrown upon the cause of the teeth's destruction, or that much practical benefit had as yet resulted from the more minute and scientific mode of investigation which the bone of the tooth has undergone by means of the microscope, and he did not expect that any practical benefit would result from this mode of investigation. Sufficient cause for the evil to which the teeth are liable may be found upon the surface; there the predisposing cause of their destruction clearly enough presents itself to the naked eye.

“Mr. Cartwright, Jr., said no one could doubt that chemical action had a certain influence on the teeth, and that the *modus operandi* described by the author was correct, but he had expected, from the title of the paper, that Mr. Robertson would have gone further than he had done, and endeavored to ascertain the cause of the decay in youth and childhood, so extensively prevailing at the present time. From the comparatively perfect state of the teeth in skulls taken from old tombs, it seemed evident that there was some degeneracy in the structure of the teeth at the present day. While men of sixty, seventy, eighty, or even ninety years of age, might be found with whole sets of teeth, there were few men of forty years old who had not some teeth removed or decayed. This might be due in part to the advance of civilization, attended by a decrease of bodily exercise and an undue nervous excitement, which produced a corresponding weakness in the physical organs. The North American Indians had very perfect sets of teeth, except those who went to the border towns, drank spirits, and became half civilized. Mr. Catlin told him that he had never met with a case of toothache, or a decayed tooth, in the true American Indian. The Hindoos also had much better teeth than the English who lived among them, their habits being much more simple. One should endeavor to discover some definite cause for the state of the bone of the tooth and its varied susceptibility to chemical action.

The condition of the bone was no doubt effected by circumstances occurring previous to birth. If the mother was delicate, and had long been in the habit of taking mercury, the child, though otherwise healthy, would have teeth that would readily decay. He did not agree with the author that the teeth possessed no vitality. He believed that the structure of the bone was vital, and had a certain degree of nervous power; the tubes of the teeth being necessary to preserve the vitality. In many teeth in an incipient state of caries, there was extreme tenderness, but when the diseased portion was removed, and the tooth filled, no more pain was experienced. With regard to destroying the nerve and filling the tooth, he had adopted that plan with success, not in the case of molars, but in single-fang teeth, sometimes even when the periosteum was in a state of inflammation.

"Mr. Catlin said they must all have observed many cases contradicting the theory laid down in the paper, that caries was produced by chemical action alone. Within the last fortnight he had in two cases filed through thick layers of enamel and discovered caries within. Moreover sensitiveness was often felt in the bone below the disorganized structure, the enamel being healthy, which tended to show that the caries was caused by inflammation. He had not seen Mr. Bell's preparation in which pus was found in the substance of the bone where there was no communication with the pulp or the external surface, being only discovered by sawing through the tooth after removal. It was impossible for a body not organized to secrete pus. He believed that caries was produced sometimes by chemical action and sometimes by inflammation.

"Mr. Duff said he had cut up thousands of natural teeth, and had often seen indications of incipient decay neither connected with the enamel, nor originating from the pulp-cavity, but a brown appearance of the bone, radiating from a central point towards the enamel, and sometimes towards the internal dentine. He had once a number of teeth, at least 800 years old, the whole texture of which presented more or less a kind of abnormal condition, not of decay, but of discoloration of the bone; and when he found that this appearance was presented in teeth removed only three or four months, he was led to the belief that there was an internal irritation to which the teeth were liable, unconnected with any external or mechanical agency; a nervous irritability connected with the structure of the dentine giving rise to caries which might develop itself internally as frequently as external decay penetrated into the dentine.

"Mr. Tomes said the author had placed both the development and the decay of teeth upon a purely chemical basis, and contended that caries of teeth and of bone had no relation to each other, that there was no symptom of inflammation in the substance of the tooth, and that there was no more sensation in dentine than in a flint. Yet patients often complained of tenderness of the surface of the dentine, and said they could not submit to an operation for the removal of the carious dentine until some means had been taken for subduing the sensibility of the dental tissues. As regards the structure, Mr. Robertson seemed to disregard all microscopical research, and all the time and trouble bestowed during the last quarter of a century in

histological research. If his opinions were correct as regards the organization of the teeth, there would be an end to histology, and also to the complaints on the part of patients, of sensitiveness when the dentine is cut away preparatory to the operation of filling. He did not see how it could be maintained that there was no relation between cement or dentine and bone. It was difficult to distinguish with certainty a fragment of bone from a piece of cementum; and the structures of the cement and dentine were often so closely blended, that it could not be said where one ended and the other began. As to there being no sensation in the teeth during the earlier stages of decay, that might be so in some cases, but not in all. In his own teeth he had felt uneasiness and discomfort before he had been able to discover that decay had commenced. The more correct view, he believed, was that the tooth had an organization, and not a very low one, except as to the enamel; and that when the vitality is destroyed, the tooth then becomes subject to the ordinary laws of chemical action. If this were not the case all the teeth should decay much at the same rate, and the rate should be uniform. If the tooth-structure was analogous to that of horn, (as stated by the author of the paper), the cells from which it was developed would be retained to the last, as in horn, nail, epidermis, and epithelium; but in dentine, the original cell form, as in the case of bone, was lost as the tissue came to maturity. In the human subject the dentinal tubes were sparingly continued into the enamel; but in some of the lower animals, as in the marsupial, their continuance into that tissue formed a characteristic feature. Mr. Robertson had said that the plain, smooth surfaces of teeth were not attacked by caries. He (Mr. Tomes) had under treatment at the present time a patient, forty-five years old, whose teeth, up to a recent period, were sound, but were now almost all diseased; the anterior surface of each incisor was now decaying just at the terminal edge of the enamel. As to the action of decomposed food upon the teeth, it was only vegetable food, the decomposition of which produced an acid, that of animal food producing an alkali. Mr. Robertson stated that the pulp of the tooth, if exposed, never threw out any secretion around it; but only a few days since Mr. Rogers placed at his disposal a specimen in which the pulp had evidently been exposed, and in which the surface had been fairly coated over with new dentine, and he did not see why that reparation should not take place under favorable circumstances. In making sections of carious teeth, it would be found that dentine was deposited in the direction towards which the caries was pursuing its course, so, as it were, to block out the disease.

“Mr. Canton urged the importance of attending to the general physiological laws of health, in order to improve the condition of the teeth, instancing the case of a child who had bad teeth and a general imperfect development of the osseous system, but who had been restored to a healthy condition by a residence at the seaside.

“Mr. Vasey said the object of the paper had been to point out the exciting causes of decay; the predisposing causes could only be ascertained by physiological research, to disregard which was most injurious to scientific progress.

“Mr. Harrison said he agreed with Mr. Robertson as to the cause

of decay, but not as to the non-possession of vitality by the teeth, though he believed that vitality was very low. The cases mentioned by Mr. Duff and others, in which the dentine was disorganized, and the enamel uninjured, were, he thought, very rare and exceptional. It was stated that decay sometimes commenced at the necks of the incisors, near the margins of the gums, and that was the place where lodgment of food constantly occurred. He differed from Mr. Tomes as to the production of acid by vegetable food only; animal food produced sulphuretted hydrogen, which had many of the properties of acid. The sulphuretted hydrogen gas produced by the decomposition of animal matter lying in the interstices of the teeth, occasioned, he thought, the chemical action which led to decay.

"*Monday, June 8th, 1857.*—W. A. Harrison, Esq., in the chair. The chairman exhibited the model of the mouth of a lady between twenty-five and thirty years of age, who, he said, was a well-grown woman, who had had the whole of her temporary teeth, but not more than eight of the second set, seven of which were still in the head, one having been lost through decay. He said he had heard of a case in which no teeth had ever been developed, and he had been promised a sight of the person for some years past. He had never seen a case in which so few of the permanent teeth had been developed, as in that which he had brought before the society. He had seen a patient who had never shed more than two temporary teeth, but had had the full development of additional permanent teeth.

"Mr. Tomes exhibited a cast taken from a boy eight years of age, who, he had been assured, had had no temporary teeth, with the exception of one on the right side of the lower jaw. The gums presented no unusual appearance, and the permanent teeth appeared to be developing very satisfactorily.

"The chairman said the case plainly indicated how the jaw might be developed without the temporary teeth.

"Thomas Rogers, Esq., M. R. C. S., then read a paper 'On Capping the Exposed Pulp.' The author commenced by characterising the operation for destroying the pulp and filling the pulp-cavity and canals in the roots, as one of the greatest of modern advances in dental surgery; but contended strongly for the principle of preserving the vitality of the pulp as long as possible, on account of the intimate connection between that organ and the tooth itself, and the dependence of the health of the one upon that of the other. Entertaining these views, he had followed out the practice of capping the exposed pulp in many cases, and with, he considered, a fair average of success. He premised, however, that rather than lay bare the pulp, he preferred to leave decayed bone still in the tooth, finding that cases in which this was done admitted of very successful after-treatment; but where the pulp was exposed, either accidentally or otherwise, he proceeded, under favorable conditions, to the performance of the operation of capping. He traced the history of the operation, commencing in 1826 with Koecker, who covered the exposed point with lead leaf, on account of its "cooling and anti-inflammatory effect," and who succeeded in five out of six cases. Fitch, writing in 1829, advised the application of astringents to the exposed pulp, and then follows out

Koecker's plan, alleging that cases thus treated very rarely fail. Dr. Harris treated 317 teeth in this manner; but, instead of using a cap, he packed gold in such a way as to form an arch over the point of the pulp. Out of 220 of these cases, seen subsequently, 202 succeeded. Dr. Foster fills the concavity of the cap, (leaving a little space over the nerve,) and also the cavity external to the cap, with Hill's vegetable stopping, regarding this as merely temporary. Dr. Hullihen substituted for the cap a few coils of a gold spiral spring, in order to be able to watch the operation better during the filling. Dr. Elliott does not approve of any space being left between the pulp and the filling. He presses asbestos enveloped in gold foil gently but firmly down into the cavity, insuring the contact of a *smooth* surface of gold with the pulp, and finds this plan uniformly successful, rarely even requiring any after-treatment. Mr. Spence Bate uses ivory caps; Dr. Bu Bouchet caps of horn. Mr. Bridgman prefers gold, and employs an ingenious instrument for placing it *in situ*. The author described his mode of practice as follows: After allowing any hemorrhage to subside, he carefully adjusts a gold cap over the exposed nerve, and, in order to avoid all possible chance of irritation or displacement, he fills over this with amalgam. Owing to want of time, he had only recorded forty-eight cases of the operation, extending over a period of rather more than four years. Of these, six had failed, or one in eight. He mentioned the conditions favorable to the performance of capping the pulp as being the general good health of the patient, and freedom from an inflammatory tendency; also the absence of previous considerable pain in the tooth, and of disease in the neighboring parts. He had found that the operation was much more liable to fail when caustic agents had been used to deaden the sensibility of the dentine, than where no such applications had been resorted to; thus, in four of the six failures, arsenious acid had been employed, whilst of the forty-two successful cases, that substance had been used in seven, and nitrate of silver and chloride of antimony in three others. He thought the high vascularity of the teeth in young persons an objection to the performance of the operation in them, and preferred subjects of a more advanced age, in whom there would probably be a greater tendency to ossific deposition. He did not consider the removal of every portion of decomposed bone absolutely necessary, but advised that the pulp should be uncovered as little and for as short a time as possible. With regard to the theory of the operation, the author referred to the well-known fact that the pulp almost always deposits ossific matter in the direction of the approach of irritation, though this can hardly be said to be fully established where that organ is actually laid bare. Drs. Harwood, Foster and Dwinelle allege that ossification may, and does, decidedly occur in such cases, and Dr. Harris confirms their statement by some remarkable details concerning cases in his own practice. The six failures which had happened to the author had taken place too soon for him to expect to derive any information on this point from them; but a tooth which he had treated on this plan in March, 1855, broke slightly in June, 1857, and allowed the filling to fall out. He not only could find no exposure of the pulp, on examination, but was able to remove nearly all the decayed dentine from

the cavity, only desisting from entirely eradicating it by the great sensitiveness of the tissue; and he inserted a solid gold filling in the place of the previous amalgam plug enclosing the cap. He expressed himself strongly of opinion that in most, if not all, the favorable cases, the deposition of osseous matter had taken place; otherwise, inflammation of the pulp, and its consequences, would have been likely to occur on every temporary derangement of the general health, or local affection of the mouth. The paper concluded with an expression of regret, on the part of the author, at the imperfection of his notes, and an earnest hope that a subject daily assuming such increasing prominence as the treatment of the pulp of the tooth, would receive a systematically conducted course of observations from the profession.

“The chairman invited the opinion of the members on the subject of the paper, commending the candor with which the author had dealt with the subject, not omitting to mention his failures as well as his successes.

“Mr. Fox said he held in his hand a model taken from a gentleman who had a diseased exposed nerve, but who refused to submit to any treatment. It was a favorable case for capping, and he accordingly capped the tooth with gold, leaving a little perforation at the top. There was a good deal of suppuration from the nerve, and it would not admit of complete capping. The patient had been saved from the inconvenience arising from the accumulation of food, &c., in the tooth.

“Mr. T. Rogers thought the plan of treatment adopted was by far the best, in a case of that kind, since it appeared to him that the pulp, in such a state, must have been too diseased to have been ever capable of after-treatment, or to be reduced into such a state in which a closely fitting cap would be successful.

“Mr. Duff said he had seen it stated, in some publications, that the Americans had actually destroyed the pulp, with a view to filling the roots. He had never attempted anything of the sort, nor had he seen any necessity for doing so; but he should be glad to know if any gentleman present had adopted that course. One practitioner had spoken of stopping the buccal fangs, the passage being so small as scarcely to admit the introduction of a bristle; but that appeared to him almost impossible. According to his opinion, in the case of a tooth, which was almost a dead body, very little of the pulp being exposed, in order to prevent the plugging from going into the pulp-cavity, one might with advantage use a cap. But if there was left a thin substance of soft dentine between the pulp-cavity and the stopping, he could not see the utility of a cap at all. If the dentine was so soft that the mere pressure of the instrument would affect the nerve, it became a question whether it should not be treated otherwise; namely, by some preparations which would destroy the sensitiveness of the dentine. He had a preparation compounded for him by Messrs. Bullock & Reynolds, of Hanover street, some months ago—arseniate of soda, and strong tincture of aconite, which he had used in many cases with great benefit. The result seemed to be, that there was less inflammatory action set up, and an almost immediate effect produced upon the sensitiveness of the dentine. After applying it one day, he had known a patient come to him the next, to remove a considerable portion of the dentine. He

thought it desirable that the society should know that there was such a preparation, and he hoped the members would try it, as it was certainly very efficacious. The effect upon young people was most marvellous, allaying the pain almost immediately.

“Mr. T. Rogers said he never employed the cap, unless the nerve was actually exposed. Supposing the nerve to be exposed, to a slight extent, and there was a considerable amount of the softened decayed bone left, he did not go on to remove that decayed bone; but the moment the pulp was exposed he put the cap on. With regard to filling the roots, that was an operation frequently performed; but it occupied an enormous time, required a great amount of labor, and was, in most cases, a painful operation. In the case of a tooth with two or three fangs, it was desirable to avoid so much pain and annoyance, if possible; and that object, he thought, might be effected by capping the nerve. In the case of a front tooth, with only one fang, he never hesitated to destroy the pulp and fill the root.

“Mr. Cartwright, jr., said he had filled many roots of single-fanged teeth, and, in the majority of cases, the operation answered well; even when there had been slight periosteal irritation. He could imagine many cases in which capping would be successful, but in many others it would not be so. It would no doubt answer in a sufficient number of cases to justify Mr. Rogers in bringing the subject before the society. He did not think it was possible to get at the three fangs of a molar tooth satisfactorily, though one might, perhaps, get at the large anterior and the internal fang.

“Mr. Tomes said he had been in the habit occasionally, though not frequently, of capping; but he had no notes of the results. His impression was, that the operation was successful in not more than two cases out of three in his own practice. It was quite possible that the practitioner might perform an operation which he believed to be successful; but the patient, feeling his tooth painful, might go to some other practitioner to have it removed. He had performed that operation for some of his neighbors, and he had no doubt they had done the same for him. As regarded the destruction of the pulp and filling the fangs, he confessed he was frequently guilty of that kind of practice. In some cases, as in the case of the posterior fang of the upper molar, it was not essential that the root should be filled, its being so extremely small. A point must be reached beyond which it was impossible to go. A very small portion of the pulp must necessarily be exposed to the stopping, even if the end of the fang be reached, and its very smallness was the reason why it did not, when wounded, produce any irritation. In the molars of the upper jaw he had met with considerable success in destroying the pulp and filling the cavity. He did not think the Americans could rightly lay claim to having originated the operation, as an account of it might be found in Ruspini's work. The account was very slight, but the author mentioned that where a nerve was exposed, it should be destroyed, and the cavity filled with gold.

“Mr. Shelley said he had occasionally filled teeth with gold, and capped the pulp; and had also left the carious dentine around the cavity, where, upon removing it, it appeared that a large portion of the pulp was exposed. He had no notes of the cases, but he remembered one

or two in which the patients returned to him, and he removed the stopping; and in one case, although there did not appear to be at the time any discharge of purulent matter from the pulp, the pain, after about two months, was so intense, that the patient requested him to remove the tooth. He then took out the stopping, and filled the tooth with amalgam, hoping to avoid any extreme pressure upon the nerve. Subsequently, pain being still felt, he removed the amalgam, and filled the tooth with gutta percha, and he had heard no complaint since, a twelve-month having elapsed. He should like to ask Mr. Rogers whether he found any difficulty in retaining the cap in position while introducing the gold. He remembered one or two cases in which he had experienced some difficulty, the cavity being rather shallow. In one case he cut the edges of the cap, so that they appeared to stick into the dentine, which answered very well.

“Mr. T. Rogers said he always made a point of filling with amalgam on the occasions referred to, first, on account of the difficulty of introducing the gold, and still more on account of the irritation likely to be produced by the operation, to which he thought the failure in Mr. Shelley's case might be attributed. If amalgam had been introduced in the first instance, he thought there would have been a greater chance of success afterwards. He looked upon the operation of capping as merely temporary, to be succeeded, as in one case which he had mentioned, by a more permanent filling when the pulp had taken on an ossific deposition of some kind.

“Mr. Coleman believed gutta percha to be a very valuable temporary stopping when the pulp was exposed, and inflammation had not proceeded so far as suppuration. It could be applied in a very soft condition, and allowed to remain for a month or two. He had frequently found, on removing it, that he could not only excavate a portion of the soft dentine, but could even apply a gold stopping with a considerable amount of pressure. Being a bad conductor of heat, it was not productive of inconvenience and irritation arising from changes of the temperature. In cases where inflammation had proceeded so far as suppuration, he had found a solution of tannin useful, by which the soft portions were sometimes almost converted into leather.

“Mr. Drew said that when he found the dentine softened extensively, he applied highly rectified spirit, and then gutta percha in its unmanufactured state, mixed with sulphur. When the pulp suppurated, or had a tendency to it, he applied a small pellet of wool dipped in mastic.

“Mr. Alfred Canton said he had found the application of a small portion of wool, dipped in arsenic, extremely useful, and not attended with the pain that some persons apprehended. He kept it in for 24 hours, and could cut the tooth with impunity the next day. Formerly, he experienced some difficulty in applying the arsenic, for he put in the wool very firmly, to prevent its escape about the mouth; but it occurred to him that that was the cause of its failure, and he afterwards put it in very lightly, so that he now failed very rarely, and cases of pain were exceptional.

“Mr. Drew said there was one inconvenience attending the use of the agent in question, (gutta percha,) namely, that it was subject to

great expansion, which was sometimes sufficient to break down the structure of the tooth.

“Mr. Duff said he had, like Mr. Canton, experienced a difficulty in applying arsenic, both in a solid and dilute form; and hence he was led to think of the preparation which he had mentioned, the sodæ arseniate and tincture of aconite, which not only alleviated pain, but rendered the tooth fit for excavating. He therefore strongly recommended its use.

“The chairman said he had tried all the various plans that had been mentioned. With regard to capping, his experience had led him to abandon that practice, as he had found it more frequently unsuccessful than successful. Cases constantly presented themselves in which, after he had capped the pulp and stopped the teeth, thinking that he had performed a successful operation, the patients subsequently came to him with irritation at the roots, the result of diseased action set up in the pulp, and no doubt, in some cases, (as suggested by Mr. Tomes,) the patients went to other practitioners, and had the teeth removed. He adopted the plan of treating the teeth by arsenic, when it was first recommended by a medical journal, and he had found it so satisfactory in cases where the pulp was exposed, that he had ever since continued it. Sixteen years ago he destroyed the pulp of two molars of a medical man, who still retained those teeth in a useful state, and never ceased to talk of the success of the operation, sending him (the chairman) patient after patient in consequence. On that very day he had applied arsenic to two upper molars of a lady recommended to him by the medical man to whom he referred; and on the preceding Saturday he removed the entire pulp, including, as he believed, the filaments of nerve, from an upper molar of a lady, to whose tooth he had applied arsenic a week before. The arsenic was allowed to remain about two days within the cavity, carefully secured, so that it could not escape, after which a temporary stopping was applied. In the course of a week, he was enabled to introduce an instrument to scoop out the pulp from the cavity, and then he introduced a very fine wire, a little notched, up to what he conceived to be the extreme end of the palatal fang, and drew out the dead nerve. The posterior fang was so small, that he did not think it possible to draw the nerve out, nor was it of much moment that it should be drawn out. The tooth being cleared of the pulp and filaments, he stopped it, and had no doubt that it would continue a useful tooth for many years. Mr. Rogers, however, aimed at a higher object than merely preserving the teeth in a decayed state; his aim being so to treat the tooth as that the pulp should throw out a bony deposit, and thus protect itself from the pressure of any stopping that might be subsequently introduced; and, though he had not found the practice successful, he would not throw any impediment in the way of younger practitioners who desired to try further experiments upon the subject.

“Mr. Bigg said he had used arsenic successfully in hundreds of instances. He believed it was successful in sixteen cases out of twenty. If the first or second application did not suffice, a third or fourth should be resorted to.

“Mr. Canton believed that arsenic did not affect the portion of pulp

contained in the fangs; and if such was the case, Mr. Rogers's object was gained without capping.

"The chairman said that where he conceived it necessary to use arsenic at all, he thought it advisable to destroy the entire pulp. It acted as an escharotic, and, whether applied lightly or with pressure, it destroyed the portion with which it came in contact, by setting up inflammation, which would extend so far as to destroy the entire pulp, and the very filaments of the nerve. By partially destroying the pulp, and then capping, a dead structure was penned up in contact with a living, which nature would not endure.

"Mr. T. Rogers said that in four out of six cases of capping that had failed in his practice, arsenious acid had been used; while it had only been used in six out of the forty-two successful cases."

Quarterly Journal of Dental Science, London.—We commenced the publication of a paper taken from this Journal, on "The College of Dentists of England: its origin and development," in our issue for July, 1857, with the intention, of course, of continuing it in successive issues until completed; but now that we have received the whole of it, we find its length so great, and its partaking more of a local than of a general character, or, in other words, concerning more the profession in England than in this country, that we have concluded to discontinue its publication, and more especially, as our space is so limited, with this remark, that those who labored so earnestly and efficiently in this good work, have ample cause to be proud of their success; for a success it is, and one of no small moment, as the future will abundantly demonstrate.

From this Journal we make the following extracts from the proceedings of the "College of Dentists:"

"Mr. Adam Thomson read the following paper on Dental Caries:

* * * * *

"First, then, in order, comes lateral pressure. This species of decay is invariably found where the teeth approximate; many suggest that the lodgment of food, and its subsequent acidity, or vitiated saliva is the *casus belli*: quite forgetting the extreme vitality and vascularity of the teeth at a certain period; but if this fact be borne in mind, I think we can explain the matter in dispute easily enough. Let us take two of our fingers, and bandage them tightly together; we find, in a very short time, mortification to have commenced, in consequence of the complete stoppage of circulation—so with the teeth. At the time the second set come through the gum, the structure is in a very high state of organization; so much so, that the slightest injury given tends to produce a morbid part, and, as in the case of the finger, we find the destruction has commenced outwardly, and tends towards a centre; with the teeth, the color getting gradually lighter as we approach the nerve.

"If this species of decay took its origin from the lodgment of extraneous matter, whether food or saliva, how is it that it is seldom or never

found past a certain age? If it be so found, the *caries* is so deep-seated, that, on ordinary calculation, it must have taken years upon years to produce the effect; but if the theory of vascularity of the teeth be admitted, there is much to be deduced from that fact.

“In a well-formed mouth, where the teeth are properly set, we find their proximity so beautifully regulated, that a strip of paper can be passed between with the greatest ease; in such a case we never find *caries* between them.

“As this must be an admitted fact, how does it agree with the idea of the lodgment of food? If such decay resulted from this cause alone, why does the food not remain, in however infinitesimal quantities, the difference in space not being half a line? All must know, that however great care may be taken to prevent it, certain particles of food *are* retained, for shorter or longer periods, by the indentations of the tooth.

“The child’s mouth at the age of six years has generally, (with the exception of four,) the whole of its first and second, or permanent teeth, the latter in progressive stages of formation. The jaw, at this period, being only formed as far as its angle goes, to retain twenty teeth, must necessarily have a more than usual amount of crowding, by containing the two sets, though each of the second is entirely dependent upon the health of the body. As they are evolved, we always find they press on the first set in such a way as to cause absorption of the fangs, and finally to take their place in the jaw; nature so wisely ordaining it, that as the child advances to, and passes the sixth year, the jaw expands, so as to give place to the second and permanent teeth. These are invariably behind the first, and in separate cells, nourished by the same chord, which not only connects them together, but supports vitality through the medium of nerves and vessels; in proof of which, should the first be prematurely extracted or injured in any way, the second suffer materially.

“It is at this period that conscientious advice is necessary; as in many cases there seems to be a tardiness in the shedding of the milk teeth, as they make way for the permanent set, which, in ten cases out of the dozen, is the cause of this unusual degree of crowding. The second teeth being forced from their proper direction, press against one another in such a way as to overlap when through the gum; hence lateral pressure. We have, then, presented an irregular set of teeth, only to be remedied by mechanical means, and should these not be resorted to, this character of decay will certainly appear at the point of contact; a very strong proof that it arises from pressure. If not too far gone, the judicious use of the file is to be recommended; though the greatest care must be observed, as, up to the period of puberty, their vascularity is so great as to render the operation difficult, if not, in some cases, impossible. If circumstances permit, and the patient be ordinarily careful, by using each morning a piece of tape ribbon, and rubbing well with any simple tooth-powder between the space made, the further progress of the disease is arrested. Now, if *caries* in the tooth existed from lodgment of food, or vitiated saliva, it would be found that, even after filling, the decay would again commence to manifest itself, and baffle all the efforts of the practitioner to prevent

its return. Let us suppose that this form of decay did arise from the vitiated saliva, why is it that we do not find it almost even in the under teeth? It is because by the tongue and saliva constantly passing over them, anything like lodgment is thoroughly prevented. I think there can be no doubt that this form of decay being oftenest formed in the upper teeth, arises from lateral pressure; though it may be argued that they have not the same chance of being thoroughly cleansed by the action of the saliva, still there is an infinitesimal portion left, which would, if the saliva theory were correct, be sufficient to produce this morbidity.

“The lip, in speaking, acts as a perfect sucker, and causes, at all periods, with the exception of that of sleep, a constant current through the interstices; and it appears that the great argument against this theory is, that should a tooth be either stopped or filed properly, we have no recurrence of this malady. I know of many cases, filed eighteen years ago, and now perfectly healthy.

“The second class of decay now to be noticed, is that which attacks the crowns of the teeth; its progress is most insidious, for often there is presented, to all appearance, a healthy tooth, though, in reality, quite undermined; and in masticating some hard substance the whole crown crushes in. This decay commences in the teeth, generally before puberty; and is seldom or never to be met with in any person past the age of sixty. At an early stage of development, the process for the formation of enamel is slow; and long prior to the second tooth making its appearance, we have absorption of the roots of the primary. The enamel at this period being immature, its deposition depends on any sluggishness of the general system. In the formation of the second tooth, the enamel is deposited in four small points, forming, at a future time, the four corners, or grinding edges of the molar. From those spots the crown is gradually perfected, tending towards a common centre. It is at this stage that the delicacy of the constitution, from whatever cause it may arise, begins to tell. The deposition of enamel depending in its perfectness upon the health of the system, infantile disease existing, its progress is stopped, leaving the crown incomplete.

“The tooth takes its future place in the jaw with easy access, from this imperfection to the fluids of the mouth, seeds of future decay are thus sown, a certain deposit being left, which in time decomposes. If the enamel had been perfectly developed, it would have resisted this destructive action; but, as the imperfection above alluded to existed, the bone beneath is attacked from the first by this outward agency, till the tooth is thoroughly destroyed. The enamel is able, from its density, to resist this acid, but only serves to bottle up what has been conveyed through the orifice, until at last, in masticating, a fracture takes place, and we have the chamber of the tooth exposed. From the many cases that I have examined, I have invariably found the decay crucial. If this disease existed in the tooth distinctly, we would find *caries* of the tooth generally; and, as in the case of cancer, any effort made to permanently arrest its progress would be fruitless.

“I do not now allude to such cases as those in which the nerve has become dead from inflammation, and which may be produced from

various causes; but to those in which it has been injured, the decay having reduced to a stage nearly approaching the moribund, but it still retaining its vitality.

“Supposing the disease to have pre-existed from internal derangement of the nourishing system, the question naturally suggests itself, would the removal of the decayed parts arrest its progress? I think not. The tooth being nourished to its centre through its three roots, by the medium of vessels and nerves, it would become a bodily disease, and anything done by the practitioner towards its cure, would only serve to protract its destruction. But the decay arising from outward means, consequent upon an imperfection in the formation of the enamel, provided it be thoroughly cut away, all friable edges removed, dried and stopped, will be prevented from showing any increase or further defect for a very long period of years.

“Thirdly. Erosion, or notching of the teeth: this denomination of decay, for decay it is, is to be met with in three or four forms; and I am of opinion that constitutional weakness is its primary cause; it invariably appearing at the junction of the teeth with the gum, and as the acrid matter evolved during illness becomes highly offensive, and we find shortly an indentation filled with a saturated-looking pulp, retentive of any extraneous matter. Its color is dark brown; and much pain is given in its removal.

“The tooth-powders made use of are, in many cases, an originating cause; some having the property of packing, especially charcoal; which, however pure, is full of hard, gritty and insoluble particles; so that, by its frequent use, morning and evening, certain small portions lodge at the junction of the enamel, under the gum, and form a nucleus for future deposits. This, in time, produces great irritation and fullness of the part, the gum recedes to a certain extent; this wedge chips away, and we have part of the bone exposed. This is what may be properly called an origin of erosion, as the strict meaning of the word is ‘wearing into ridges.’ Its color is sometimes white, or slightly yellow, bearing an extremely high polish. The most likely solution, however, is not dependent on the above; for we find the disease in many who have never used this tooth-powder at all; and so gradual is the ravage of this decay, that the patient is not aware of its existence until intromitted with in some way or another. Its color is of a light brown, and it is extremely sensitive. In those who have been obliged to take acid as a constitutional remedy, the appearance is very different. It presents, in such a case, a ragged and irregular edge; while the decayed bone still adheres in layers or films, or goes so deep, sometimes, that in removing the carious part, we find the nerve laterally exposed. Of all the species of *caries*, this is the most difficult to treat; and is likewise often found attacking the chalky teeth, which result from strumous dyathethis. In such cases, I have found, as a palliative, the greatest benefit accrue from the use of a lotion composed of tannin and a solution of morphia, its property being to harden the surface of the bone, and render it less sensitive.” * * *

“*Paralysis produced by Diseased Teeth.*—Susan D., age nineteen, domestic servant, had been for some time unable to perform her duty;

was suffering from uterine derangement, and supposed to have organic disease of the uterus.

"She had taken mercurial preparations during an attack of pneumonia, and their effect had been to produce violent inflammations of the mouth and gums, with loss of vitality of nearly the whole of her teeth. She had suffered from toothache while under the mercurial treatment, but had of late been altogether free from pain; and the presence of so many decayed teeth was attended with but little annoyance.

"The uterine disorder was relieved by topical and constitutional remedies, but the relief was of a temporary character only, as the heart was soon the seat of abnormal action; and for several months a series of metastatic disorders was continued, until the life of the patient was endangered; and those in whose charge she had been, were weary of the trouble and disappointment they had experienced. Under these circumstances, I was again requested to see the patient; she had become paralytic of the left side, and had lost the power of articulating. My professional friends were opposed to the opinion I had formed when previously attending the case, and to which I still adhered, that the state of the mouth had much to do with the anomalous character of the disease. The absence of pain in the dental region was offered as an answer to my suggestion that the teeth should be extracted. Upon my own responsibility I proposed putting the matter to the test; and having stipulated that I should be allowed to remove the whole of the diseased teeth, I entered upon my task; and before the patient was returned to her bed, I had extracted nine teeth and thirteen stumps.

"The result exceeded my most sanguine anticipations; as within forty-eight hours from the operation, a return of sensation and power in the paralyzed limbs were observable, and a few days sufficed for the restoration of her speech. For several years I knew the patient; she married, had several children, and enjoyed excellent health."

W. R. C.

In the number for October we find lengthy and interesting papers read before the "College of Dentists," on "Pivoting Teeth, by Mr. Perkins," and on the "Electric Cautery, and its application to Dental Surgery, by Mr. T. Harding," from which we make the following extracts:

"It will be as well, at the commencement of the present communication, just to glance at the history of the introduction of the electric cautery, and its general application in surgical practice. Crusell, of St. Petersburg, was the first to employ it for surgical operations, although his researches generally, on its use, were not published before the year 1846, yet his operations bear date anterior to those of any other surgeon.

"In 1844, M. Louyet, of Brussels, recommended the operation for destroying the dental nerve; and in 1845, Heider, of Vienna, at the instigation of Steinhilber, of Munich, cauterized the dental nerves with the galvanic cautery. In 1850, Mr. Marshall was the first to employ

it in practical surgery in this country; but his researches were not published before 1851, when he brought the subject before the Royal Medical and Chirurgical Society in April of that year. In the same year I published a short paper on its use in dental surgery, being the first to adopt it in that special branch of surgery in this country; and in the same journal, 'The Lancet,' a paper also appeared from Mr. Waite, recommending its use in dentistry. * * * *

"The *battery* is a compound one of Smee's, and consists of six pairs of plates of zinc and platinized silver, contained in six cells, which are set in action by one fluid, viz.: dilute sulphuric acid. The battery may, of course, vary according to the choice and taste of the operator; but it is desirable to render it as elegant and as simple in arrangement as possible. When I first employed the electric cautery, I used a battery of two pairs of plates in a single cell. I now prefer the larger battery of six cells, because a large battery with weak acid will last longer than a small one with strong acid; besides this, the action of the battery is more uniform, and lasts much longer. A Smee's battery is the most convenient of application; it is always clean, ready when wanted, and has the advantage, moreover, of cheapness. Grove's and Maynooth's batteries are not fitted for the purpose required, as they are troublesome, and often give out fumes of nitrous acid, which are decidedly objectionable.

"The *cauterizer* is thus constituted: the terminal six inches of the poles, which are of copper wire plated, are supported on an ebony or ivory handle, upon the side of which one of the poles is interrupted at a particular point. The extremities of the poles are connected by a piece of platinum wire, a hundredth of an inch thick, and three-quarters of an inch long, which is bent into a loop. The sides of the loop are then brought parallel and nearly close to each other, without touching, and it is thus introduced into the pulp-cavity of the tooth to be operated on. By a slight pressure on one side of the handle, the interrupted pole is temporarily joined, and the platinum wire immediately becomes brilliantly heated, as it lies in contact with the tooth-pulp. Sometimes, however, I have found it desirable, in the first place, to complete the galvanic current, and thus heat the platinum wire, before bringing it to bear upon the exposed pulp. The flexibility of the loop of wire enables the operator to bend it in any direction previously to use. In this way I have succeeded in rapidly destroying the pulps of decayed and condemned teeth, and have proceeded, sometimes after a few minutes, to the operation of filling with gold, or with other suitable stoppings, as Ash's metallic paste. I use several cauterizers, with extremely thin wires, made expressly for myself by Coxeter, of Grafton street, and Maddox, of University street.

"*Of the Operation in general.*—The affected tooth being carefully examined, its cavity is to be well dried out and cleaned; a soft napkin is then introduced, to protect the mouth from the possibility of contact with the instrument, the platinum point of which is passed into the cavity of the tooth; it is then heated, and, from its brilliancy, gives a clear and distinct light, and the tooth-pulp is lightly touched with the heated wire, and the whole or particular portion of it required is destroyed. If the operator prefer it, he may have the wire heated before

introduction into the mouth; but my own practice is generally to apply the wire before doing this, and then permitting incandescence to take place in the mouth, which gives a light which is not seen by the patient, and so well illuminates the interior of the tooth, as to permit the tooth-pulp, or diseased membrane, to be seen very distinctly and clearly.

“There is some caution to be observed in the use of this agent, which it will be as well to mention, and that is, to avoid burning or otherwise injuring the solid part of the tooth; particular attention and care should be paid to this point. This will not happen, unless the application is prolonged, which will very rarely indeed be required, if special care be observed to have the wire at a white heat. This is the more necessary, to produce speedy destruction of the part to be touched, which is effected almost instantly. In one instance under my care, that of a lady for whom I nipped off the crown of an incisor tooth, for the purpose of fixing some artificial teeth, and so exposed the pulp of that tooth, I applied the electric cautery at barely a red heat, owing to feebleness of the acid; the consequence of this was, that the dental pulp became attached to the end of the wire, and was actually drawn out entirely. This has been preserved. It gave some slight pain for the moment, but nothing in comparison to the pointed steel or silver wire used by most dentists. This perhaps unimportant accident, I think, would not have occurred, had the cautery been at a white heat, as it would then have completely carbonized or destroyed the part with which it came into contact.

“The *effect* of the operation is the rapid destruction of the pulps of the decayed and condemned tooth; not the whole of the pulp, for that is not always necessary, but that portion of it especially which is exposed. If this is done with a light, steady hand, no subsequent inflammation is produced upon the substance of the tooth, or in the cavity. If there should be any marked sensitiveness in the tooth, independent of the pulp, the slightest application of the cautery to it will prove effectual in completely removing it. In the large number of cases in which I have employed the electric cautery, I have never known any bad effects produced on the tooth, and this I attribute to the care with which it has been applied. I am, however, quite prepared to believe that a want of attention in this respect would not only prove injurious to the tooth, but even in many instances cause its destruction. It would be only under such circumstances that the operation could be attended with or followed by severe pain.

“In whatever condition the tooth-pulp may be, the operation is associated with a little pain. But as the time of its application is not unfrequently just a second or so, in the large majority of instances in which I have employed it, there has been no pain whatever felt. There may be a sort of a twinge, which is but momentary; and whatever pain may arise is not to be compared to that arising from the process of extracting a tooth, which, as is well known, is by no means free from a very considerable amount of pain. Some of my patients have felt so little when it has been applied, that they have asked me to apply it a second time, to make all certain that the dental pulp has been effectually destroyed.

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“As a rule, however, the tooth should not be stopped on the same day as the electric cautery has been employed, unless in the exceptional instances just mentioned—the removal of the carious portion not being followed by sensibility. Experience and practice teach us to know the proper cases which can be plugged immediately. * * *

“Now, of the *proper cases* in which the electric cautery may be used, the most important and common is that known as severe ordinary toothache, especially that form of tooth affection arising from a cavity with exposure of the tooth-pulp. In cases, also, of cavities requiring filling, in which too great a sensitiveness is present, thus preventing the satisfactory removal of the carious portions of the tooth, it is equally valuable. It is useful, also, in cases where the gums have receded, with exposure of a part of the neck of a tooth, which is extremely sensitive, and oftentimes very painful to the touch; in these it is necessary merely to touch the exposed necks, to remove the sensitiveness. It is not less serviceable in its application to tender, sensitive and bleeding gums, producing a new and healthy action, which permits them to become firmly attached again to the necks of the previously exposed teeth. Sometimes it is merely necessary to hold the heated wire near a sensitive neck, without actual contact, to remove the tenderness. I have destroyed, with the greatest ease and rapidity, the pulps of the incisor teeth which have been cut off for the purpose of being pivoted. Every dentist is aware of the sensitiveness which sometimes exists in a pivoted incisor tooth, depending upon the vitality of the stump; this is completely obviated by the use of the cautery. I have employed it also in numberless instances in which unusual sensitiveness exists to both warm and cold substances, depending upon a variety of causes—such as exposure of the necks; or arising from chipping and fracture of the tooth from brittleness or some other cause; or, again, where the tooth has been filed, cut, or accidentally broken. A very striking instance of this kind—that is, unusually great suffering from taking either warm or cold liquids into the mouth—came under my care but the other day, in which permanent and complete relief was afforded from the electric cautery. If a tooth is snapped off at the neck, and the pulp-cavity becomes exposed and painful, it can be destroyed, and an artificial tooth may be fastened to the stump, in the same manner as when the tooth is intentionally removed for this purpose. Sometimes, also, bleeding will occur from the rupture of some minute capillary vessels during the removal of caries from a cavity which may have become morbidly vascular, without the presence of actual pain, or even sensitiveness; it is equally serviceable here as in other forms of disease, and stops the hemorrhage, which is inconvenient and troublesome, from its interference with the progress of stopping the tooth. I have also applied it in sensitiveness, arising from the wearing away or grooving of a tooth from the constant pressure of the spring clasp of a plate, which has caused the destruction of the dentine; mechanical friction, in fact, producing this condition.

“As a general rule, the electric cautery may be used with decided advantage in almost every case of diseased tooth, with very few exceptions. But the commonest affection *constantly* requiring its use,

I again repeat, is ordinary *toothache*, not unfrequently most agonizing in its character, and depending upon the presence of a cavity from caries, which has laid bare the delicate nervous pulp contained in it, which, so long as it is likely to come into contact with the liquids and solids of the mouth, will continue in this condition. Destruction of the pulp and subsequent stopping prove the remedy; the nerve is destroyed, the pain disappears, and the tooth remains for years, and answers as well as if it had been filled without exposure and destruction of the pulp. * * * *

“I must also speak of another form of affection which has been relieved by it—namely, neuralgia of the face—a form of *tic-doloureux*, supposed to depend upon some other cause than a carious tooth. On examining the mouth, however, I have detected an affected tooth, on destroying the pulp of which with the cautery, and subsequently stopping it, a permanent cure has been effected.

“It may be recommended as admirably suited to destroy fungous growths springing from the internal pulp, which often bleed very profusely on the slightest touch.

“It will thus be seen, that the application of the electric cautery is wide and extensive in the number and variety of cases of tooth disease.

“The following, however, *are unfit for it*, as it would not only produce no good, but harm might result from its use:

“When a tooth is loose, with its external aspect sound, but the pain depending upon the presence of a fungous growth, or small abscess developed at the end of one or more of the fangs. In such a case, extraction only will afford relief.

“It will prove of no avail in an attack of inflammation of the central pulp, which may sometimes affect a tooth that is otherwise apparently sound. This may be known by the severe, heavy, throbbing pain which it occasions, running up to the head, accompanied with considerable tenderness of the tooth, and the gum around it. This condition may go on to suppuration of the pulp, or to abscess of the alveolus, and consequent death of the tooth. Leeches are here useful, conjoined with some slight constitutional treatment.

“And lastly, when we find a black, unsightly tooth lying loose in its socket, with pain depending upon the irritation produced by its presence, the cautery will be ineffectual, as the tooth is in a true state of necrosis, is quite dead, and has truly become a foreign body; it must therefore be removed. This condition I have not unfrequently seen to depend upon the use or abuse of mercury. * * *

“*Conclusions.*—I have now been in the habit of employing the electric cautery for upwards of six years, and during that time have used it in more than five thousand instances, with an amount of success that has surpassed my most sanguine expectations, and without the occurrence of a single accident worthy of mention. I may truly say, that there are very few cases of *toothache* which cannot be relieved by it, when the membrane or tooth-pulp can be got at to destroy it. These very few cases are the exceptional instances which have already been referred to. It has been held by writers on diseases of the teeth, that the impossibility of instantaneously effecting the absolute destruction of the tooth-pulp in such teeth as are situated at the back of the

mouth, which possess several diverging roots, is a sufficient ground for rejecting the means which were employed for that purpose—namely, the heating of a wire, in the form of the actual cautery, which cannot at any time be maintained at a white heat. It was in consequence of this very great difficulty that the actual cautery has fallen into disuse. Now, the advantage which the electric cautery has over every other conceivable method is, that the white heat produced, and which cannot be obtained in any other manner, effects the purpose desired suddenly and with completeness. Besides this, it can be applied with perfect ease and freedom to teeth situated in any part of the mouth, without the risk or danger of burning it—a risk almost impossible to avoid, with the greatest care, when the actual cautery or heated iron was employed.

“It might be supposed, again, that some imaginary terror is likely to be excited in the patient’s mind at the idea of the electric cautery, in the shape of an incandescent body, being used, for any purpose, in the mouth. I can truly say, that in the large amount of experience of its use which has fallen to my lot, there is not the slightest ground for such a supposition. If this be an objection to its employment, then it falls to the ground; for I can call to mind no instance where this fear was manifested. Sometimes, as has been before mentioned, the wire is introduced, already heated, into the mouth, when being applied to the tooth.

“At one time much dread of the actual cautery arose, from the burning of the mouth by the heated handle of the instrument, which was unavoidably employed to keep the wire hot, and this occasioned, we believe, its comparative rejection in this country. With the electric cautery, such accidents are avoided; I may say, they scarcely ever occur in the hands of any ordinarily skilful man, for, owing to the extreme fineness of the wire employed, the local heat, though intense, is very limited in its action, and, with due care, the tooth substance need not suffer any appreciable injury. For the same reason, with the additional and more powerful one of suddenly breaking the connection between the poles of the battery, no injury can happen to the mouth or gums.

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“The President observed, that he had for several years employed the electric cautery, as first introduced by Mr. Harding, for destroying the sensibility of the dental pulp. He could not say that his applications were invariably attended with success; on the contrary, he found, by experience, that it was necessary, after its application, to wait even a month, nay, in some cases, even three or six months, before he stopped the tooth. During the interval, he ordered the patient to dress the tooth with some kind of sedative, in conjunction with spirit; such as, for example, three grains of morphia, mixed with two drachms of a saturated solution of camphor, in either chloroform or spirits of wine; in fact, he had found the preceding remedy an excellent dressing in all cases of exposed pulp or sensitive dentine. But he must confess, that in those cases wherein he had employed the actual cautery, and filled the tooth some three or four days after, the results were invariably periostial inflammation, accompanied with aveolar abscess, and either the tooth had to be immediately extracted,

or the stopping removed, and an antiphlogistic mode of treatment employed. He, therefore, arrived at this conclusion, that if the actual cautery be employed, it is necessary that the vitality of the tooth should again recover its normal state. (*Hear, hear.*)

"Mr. Harding thought, that the objections made by gentlemen would be found very fully answered in the paper which he had had the honor to read to the College. He had had very extensive practice in the use of the electric cautery, and he felt no doubt that it was the most perfect cautery that could be used. (*Hear, hear.*)

"Thanks were then voted, amidst applause, to Mr. Harding, for his interesting and instructive paper."

"*To the Editor of the Quarterly Journal of Dental Science.*—Sir—As gutta percha is so extensively used by dentists at present, for many purposes, and I am not aware that the *modus operandi* has ever been made public, but the method how to purify it kept a profound secret, I feel sure you will not consider it superfluous if I supply the deficiency, and make known to the profession how to prepare it for dental purposes. Take any given quantity of the gutta percha of commerce, and reduce it to shavings; place it in a wide-necked bottle or phial, and cover it with either ether or chloroform, which will dissolve it; allow it to remain for a time, and the white or pure gutta percha will be precipitated to the bottom in a white but hard mass. The impurities of the gutta percha will be held in solution, and can be poured off and used again for the same purpose; after distillation, the residue at the bottom of the bottle should be taken out, and placed in a basin, or some other vessel, and washed repeatedly with warm water. This must be repeated and constantly poured off, and ultimately left to dry, in a place where it will be free from dust, or exposure to the atmosphere; when thoroughly dry, repeat the washing with warm water, and ultimately amalgamate the whole ready for the operator.

"I remain, sir, yours obediently, S. LORD, (Blackburn.)"

"*Dental Register of the West,*" for December.—This number has just come to hand, and, as usual, contains much good matter.

The proceedings of the dental convention recently held at Cleveland, Ohio, are reported in full, and make a very instructive paper, from which we would extract (not having room for the whole) but for our inability to select where all is so good; we must content ourselves, therefore, with the following:

"Dr. McCune offered the following resolutions, which, after being enforced by appropriate and pertinent remarks from several members, were adopted, *seriatim*:

"*Resolved*, That each member of the convention be requested to keep a strict record of all the nerves treated by him, and examine them, so far as practicable, before coming to the next meeting, and report his success at that time.

"*Resolved*, That this convention appreciate the efforts of our dental

colleges to elevate the standard of the dental profession, and to qualify young men for sustaining that standard.

“*Resolved*, That this convention condemn the practice, pursued by some, of puffing themselves into business, by flaming advertisements and circulars, proclaiming that they have instruments unequalled, that all their operations are infallible, as they can prove by Dr. A. and Governor B., and trying to convey the idea that they are the great centre and circumference of all dental excellence; as savoring of quackery, and entirely unworthy of a liberal profession.

“*Resolved*, That we are happy to recognize Prof. Watt, of Cincinnati, as a member of this convention, and shall always be happy to see dentists from abroad, and would cordially invite all to participate with us in our discussions.

“Dr. L. C. Ingersoll offered the following, which was adopted :

“*Resolved*, That, in the most emphatic terms, we discountenance the preparation of students for the practice of dentistry in a few months, and recommend, most strongly, a thorough education in a dental college.”

An article on the “Boston Meeting, by Dentatus,” attracted our attention, especially by the *beauty!* of the following stanza, which occurs near the commencement of the article :

“ This Boston harbor,
With its oily Chowder,
In western stomachs
Will kick up a rumpus.”

“John Phoenix,” in his newspaper report of this meeting, attempted, and, in a few instances, did say some witty things; we wish we could say as much for “Dentatus,” so far as wit is concerned. We are therefore under the necessity of inquiring of him, and which we think he is bound to show, “*where the laugh comes in.*”

In the “*New York Musical World*,” (a copy of which has been sent us,) we find an instructive article on “the Teeth in their relation with respiration and singing,” by an old friend, “George Smillie,” dentist, from which we make the following extracts :

“I am not aware that the idea of the teeth being applied to or ever having been thought of or included as a branch of musical instruments was broached before, even in the philosophy of the most erudite or observant. Yet such is, however, the fact, and it is only amongst the more observant of the medico-dental professors of this wonderful and useful art that this proposition has been fairly established. It is not necessary to revert to the idea, so humorously dwelt upon, of the grotesqueness and inapplicability of a ‘prima donna’ and an entire operative corps attempting to sing with their mouths in a toothless condition. The hollow, cave-like, sepulchral, incongruous effect of such an exhibition would rather savor of the farcical, and occasion laughter, than it would be accepted as a demonstrative proof of the inaccuracies of toothless voices and gum vocalizations. The *Musical World*, in the

article alluded to, goes on to show 'that the teeth in man are more useful than in their mere mechanical appliance in the functions of mastication,' &c., functions which place him, in this respect, no higher than any other carnivorous animal, and advises wisely, when he says, 'Seeing that the teeth are of such indispensable use in elocution, whether oratorical or musical, it behooves all speakers and singers to look well after the safety of their teeth.' An orator *may* make a very graceful and eloquent speech, and a singer make a very successful '*hit*,' notwithstanding many opposing circumstances, but *neither* can speak or sing successfully '*in spite of their teeth*.' It must be acknowledged, then, that few subjects of such importance are more neglected than is this natural economy of the teeth in their relation with respiration, speaking, singing and oratorical power of vocal expression. I may say that this neglect is almost universal, and the misfortune is that the abuse and not the use of the dentistical art has rather tended to increase the vocal requirements than to decrease the negative obstructions consequent upon the imperfections or loss of these organs. It is not necessary here to enter upon the pathology of, while it shall be our endeavor to treat the subject of, the vocal powers in connection with the teeth, with all the force that the physical construction of the organs of the voice can be exhibited by philosophical, practical and physiological bearing in their important connection with the vocal power—which presents a subject of great extent and momentous utility, but which has never as yet received the attention it merits from those who are really capable, either *practically* or theoretically, to elucidate its principles. * * * *

"First—In the act of speaking, the perfect denture will not allow a greater quantity of breath to pass through the teeth than is absolutely required to articulate the words, hence, (when the teeth are absent,) the sensation of exhaustion of the lungs and of the whole system is experienced; this, too, after a very short period of speaking or reading aloud. In consumptive people these symptoms are greatly aggravated. In singing, the same phenomena present themselves—exhaustion and 'sinking' of the system. How important, then, are the teeth to conserve respiration.

"The teeth, secondly, afford a fence or dam to prevent the fluids of the mouth escaping and driveling externally over the lips.

"Thirdly, they present a resistance for the tongue in the articulation of the dento-lingual, and the compound palato-dento-lingual sounds. The anatomical construction of the tongue, in connection with the organs of the voice, is one of the greatest of the great wonders of the creation of living things.

"The elaboration and delicacy withal of the construction of these various organs, their harmonious action and final perfection, giving to man alone the power of speech and mathematical construction to harmonize sounds, whether for the expression of the ideas of the reasoning faculties, or for the trilling of vocal harmonies in love and praise to Him who made us the fearful and wonderful creatures we are. * *

The change of form of the jaw-bone, consequent upon the loss of the teeth, affects the muscles of the vocal organs, the elongations or contraction of one or more muscles will totally change the character of the

voice, the effects being the relaxation or tension upon the chamber of the same and upon its vibrating surface.

“This may be illustrated by a toothless person attempting to whistle tunes which he used to whistle when his teeth were present and in a perfect state; he will find the want of their presence to regulate and preserve the now extra required breath from loss. The whole physical character of the mouth is changed,—and change makes change. He loses the command over the muscles of the tongue and throat, because they have not the resistance of the teeth and alveoli covered with the gums. If an attempt be made at oratory, or singing, or even prolonged speaking, under these circumstances, the voice is muffled, hoarse, weak and unsteady by fits and starts, without melody or any of the original qualities of its normal character, while the exhaustion of the respiratory organs is the immediate concomitant of the faintest attempt to largely exercise the vocal force. It is usual for musical critics to speak of professors of singing as having ‘a splendid organ,’ meaning the voice and its power. The voice is, it will be observed, the mere mechanico-philosophical result of a series of separate organs, uniting and acting in harmonious unison, of which the lungs form the bellows, to allow the organs to execute vocal vibrations through the vocal tube by the chamber of the voice and its vibrating edges. The voice, therefore, is no organ, but dependent upon a series of delicately constructed organs.”

“The following simple plan for making a good hard plaster model, deserves wide circulation.—A tablespoonful of strong solution of gum arabic, mixed with water prior to adding the plaster, will render it very hard and pleasant to work with.

JAMES BATE.”

Selections and Abstracts from Medical and other Periodicals.

BY S. S. W.

“On Hypertrophy of the Salivary Glands of the Palatine Region.—By M. ROUYER. (*Moniteur des Hôpitaux*, 1857. Nos. 2-4.)—M. Rouyer bases this paper upon five cases observed under M. Nélaton, and which he gives in detail. He refers to others related by authors who did not suspect their true pathological nature.

“The salivary glands situated within the parietes of the buccal cavity vary in appearance according to the regions they are observed in. We have now to do with only those of the palatine arch, and especially of the velum palati. They are abundant where they line the osseous portion of the arch, particularly at its lateral parts, near the alveoli. In the velum they form a thick plane covered by the muscles. The glands vary from $\frac{1}{4}$ to 2 millimetres in size, the largest being found at the adherent border of the velum, on each side of and near to the mesial line, where they form a layer 7 or 8 millimetres in thickness. Their orifices are here distinctly visible, even at a distance. In the remainder of the velum the glands form a plane thicker than the muscular one, and extending to its free edge, where they almost exclusively constitute the uvula. The glandular is separated from the muscular

plane by an aponeurotic expansion extending from the palatine muscles.

“The hypertrophy of these glands is oftenest met with in young persons of robust health, and in the eleven cases here collected, five of the subjects were females, and six males. The increase in size takes place very slowly, and may scarcely attract attention for years, and then proceed rapidly. In some of the cases related, the tumors had acquired the size of half an egg. They have always commenced in the velum palati, although observation will probably show that the same enlargements prevail in other parts of the buccal regions. A very important character of these tumors is, that they contract no adhesions to surrounding parts, but become encysted, and are easily enucleated. The mucous membrane covering them may be either normal or slightly vascular, and is not adherent. They are seen in well-defined relief under this, having a lobular surface, and being elastic and resistant to the touch. They are painless, and the patient applies for relief on account of the functional disturbances their increase in size gives rise to. They may have already reached a considerable size before they have attracted the patient's attention, the alteration in the voice, which is the first symptom, being attributed to other causes. Their slow growth, painless character, and well-defined form, distinguish them from cancerous or syphilitic growths. The operation necessary for their removal is very simple, consisting in making a longitudinal incision, and detaching the tumor from the mucous membrane by means of a spatula, or the fingers. In one case, in which the ablation was imperfect, M. Nélaton applied the actual cautery with success. Relapse does not follow the operation. Microscopic examination of the tumors made by M. Robin, clearly proved their glandular nature, and, in several instances, they were found to contain calcareous concretions.”—*Brit. and For. Med. Chir. Review*.

Reproduction of Bone.—“As the bone is formed by the periosteum, if the latter be not removed, and the soft parts are kept extended, the bones as well as the joints are re-produced, and the part restored to its former usefulness. It has long been known that bone will be re-produced, provided the periosteum remains, and we only claim to have made the discovery that the joints are also, by proper management, restored, even under the most unfavorable circumstances. Whether they are as perfect as the original, possessing cartilages, ligaments, and synovial fluid, we are unable to say; but we know that they possess motion and sufficient strength to perform the function of the most perfect joints.”—*Charleston Med. Jour. and Rev.*

“*On the Proximate Cause of Dental Caries.* By DONALSON MACKENZIE.—In October, 1854, I communicated a paper on this subject to the *Medical Times and Gazette*, which has proved a cause of some sensation amongst the old and the new lights of this portion of dental physiology. The subject is certainly not without diagnostic difficulties,—but this ought to act as a stimulus to exertion in ascertaining and verifying to a certainty, whether this bane of civilized life be idiopathic, consequent upon a peculiar diathesis,—from defect in original organization,—or if the cause be external chemical action.

“The solution of this problem ought not to be left exclusively in

the hands of the dentist; the medical practitioner has many opportunities of detecting the cause in its early stages,—the dentist's interference for the most part only begins after the mischief has been done. 'Prevention is better than cure,' and if the theory which I propounded in 1854 be true,—that caries has its origin 'not *in*, but on the teeth,' it is obvious that chemical action is at work, which it is not only possible, but easy to neutralize.

"The difficulties of this question are neither to be solved, nor are they to be reasoned upon from analogy, because, in the first place, the teeth are in no way analogous to the general osseous structure, either in their organization, or in mode of sustentation. The analogist has no field here to found resemblances upon. The teeth seem to stand apart from all other bones, equally in formation, growth, organization, and mode of sustentation. The dental physiologist, in his search after the truth of the present question, is therefore driven back upon the mechanical dentist,—the man whose business it is to cut up bushels of human teeth, not such teeth as the physiologist might be apt to fly to for information, teeth already more or less carious, but to teeth which are, to all external appearance, sound, such as might be worked up into artificial sets. It has been my own fate during probation and practice to have cut up, for manipulation, thousands of teeth, without ever having discovered a carious spot in the substance of the dentine into which an external aperture did not enter. Nor have I neglected to inquire amongst those of my professional brethren, particularly that portion of them whose whole practical existence has been spent in bone and human teeth manipulation. The general answer to my inquiries has been that they could not charge their memory with having witnessed such phenomenon. Now, if the commencement of any sort of dental caries be in the substance of the dentine or ivory of the tooth, it seems passing strange that so few of us have ever discovered it in an incipient state in this position.

"In the substance of a lecture delivered by Dr. Carpenter, the other evening, to the students of the College of Dentists, he did me the honor to notice my paper favorably, but objected to my theory, that 'caries had its origin on, not in the teeth.' I subsequently learned that he founded his objection upon the fact that caries of the bones has frequently its origin in the substance of the bone. But I should like to be satisfied of the analogy, ere I give up my opinion.

"Both my attention and experience have been principally directed to caries of the *teeth*; consequently, my experience of that disease in the bones is limited. But, from what I do know, I conclude that caries of the teeth more resembles caries in trees than in bones, and the *simile* is strengthened by the circumstance that caries of the teeth and caries in trees are both cured by exactly the same process, viz: cutting out the diseased portion, and stopping with a suitable plug, or stopping. Nor do some of our other curative processes differ greatly from those of the arboriculturist. Where he finds it necessary to cut away a branch, or a diseased portion, he carefully pares away any irregularities of surface, leaving it quite smooth, that moisture may not lodge,—the action of which would induce a recurrence of the disease. This practice is precisely similar to that of the dentist, in

his operations with the file upon carious teeth ; he is especially careful that no roughness or cavity remain. The woodman's care is, that the excised portion be so left that the effect of sun and air may quickly dry up the night dews, or other moisture. The object of the dentist is that no lodgment of salivary mucous may take place ; this being (when abnormal) the proximate cause of caries in those organs.

“ It is interesting, as well as amusing, to observe the pains people often take to puzzle themselves ; they may be observed with sweat drops on their brow digging diligently in every conceivable place in search of the gem, which, when worn out with fatigue and pain, they by chance discover has all the while been lying at their feet.

“ We have caries particularised by different writers as superficial and deep-seated, internal and external, caries from lateral pressure, crucial, &c. But what are these ? Mere terms, significant of the period of, or applicable to, the progress which the disease had made at the time it is so termed. Let us take, for example, that which I lately heard termed crucial decay. What does it mean, unless it be that the indentations in the crown of a molar tooth for the most part take the form of cross lines ? These, in many cases, form deep fissures, extending the whole depth of the enamel, leaving the dentine unprotected ; such interstices form convenient lodgment for corrosive salivary ingredients. The unassisted eye is first apprized of the presence of caries by these lines becoming discolored ; but if carefully examined at an earlier stage, the disease would be found confining itself to several very minute specs, into which the point of a very fine needle only could pass. Were the tooth extracted at this stage and dissected, the substance of the dentine would be found but slightly affected, and that probably at the central orifice only. As the disease advances, the entire length of these cross-lines is involved, and, of course, caries in a crucial form is presented and continued until the dentine has, to a certain extent, been destroyed. The unsupported enamel crumbles in. My old friend Kœcker would then have it deep-seated, or internal caries.

“ Let us now glance at this disease when affecting the lateral sides of a tooth. This has been called caries from lateral pressure ; and in support of this short-sighted opinion, we are asked to imagine two fingers bound together, and to conclude that vital action would be suspended betwixt the parts thus brought in contact. Circumstances would govern the effect even here. We do not find that the toes of the Chinese ladies die from pressure. But apart from that, we have offered an analogy betwixt a highly organized tissue and a substance which may be pronounced inorganic, and asked to believe that pressure can have a similar effect upon each. It appears to me that a more philosophical, at the same time a more reasonable cause for this affection, might be entertained, by supposing that around and close to the parts in actual contact, corrosive depositions from the saliva found undisturbed lodgment, and that the enamel there, by their chemical action, becomes deprived of its lime, thus allowing passages for the action of this fluid to the surface of the dentine ; where, being perfectly undisturbed by attenuating menstrua, the work of destruction proceeds rapidly. More difficult questions than this have been solved

by fewer evidences than we are able to produce in this case. In the first place, we have thousands of cases of great lateral pressure, where no caries exist; and even where, from friction, the enamel has been worn almost entirely off the sides of the tooth where it had been in contact. The saliva was normal. Again, have we not the lower incisors frequently in a most crowded condition, most of the other teeth carious, but those sound. There is always an excess of saliva present there, which attenuates the mucous, or keeps it in solution, and prevents its corrosive action. But no further evidence of the truth of this is required than the teeth themselves. When the disease is in an incipient state, when lateral pressure has not been great, a brown spot will be observed, which can be removed with facility without removing the thickness of the enamel. When the pressure has been excessive, the commencement of disease is rather differently presented. It will then be observed, that the discoloration takes the form of a ring, generally oval, of a blue color inclining to brown, the centre part which has been in contact being normal in color and slightly worn; it will also be observed, that the darkest part of this discolored ring is towards the centre, and should the tooth be placed under a microscope or powerful eye-glass, it will be seen that numerous small apertures are present entering into the enamel. This spot can also be removed with a file if taken before the thickness of the enamel has been penetrated.

“To account for the phenomena of caries excavating a cavity under the enamel, it is not that the dentine is more easily acted upon chemically than enamel; on the contrary, it is less so, but when a hole is formed, the agent that performed the work, is left in undisturbed possession of the premises, so the action is rapid. This is proved by the fact that if the whole carious cavity in the crown of a molar tooth be excised, and the grinding surface be left flat and smooth to the action of the food in mastication, there is every chance such a tooth never will decay there again. It is depending upon this law, that our operations with the file upon the incisors are based, that no lodgment be left for corrosive agents, that the brush saturated with a neutralizing fluid be used frequently, and the teeth are so preserved from further injury.

“My motive in addressing myself to the medical world is to show, that with a knowledge of the true cause of dental caries (allowing the cause to be chemical) how much human misery it is in their power to prevent, by directions to mothers and nurses. Although my hypothesis of the cause of caries is not generally supported by my professional brethren, I am nevertheless satisfied in my own mind that any person may not only have carious teeth cured and rendered useful, but that by proper advice, and strict adherence to such advice, he may prevent any other teeth from becoming carious.”—*Med. Circular.*

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 “*Chloroform, Administration of.*—As a simple method of preventing accidents, it is recommended to give a glass of spirits previous to the administration of chloroform, to keep up the action of the heart, and prevent sickness or sinking. In case an overdose should be given, an injection of brandy and water into the rectum will be valuable.”—*Braithwaite's Retrospect.*

“*Death from Chloroform.*—We find the following in the *Courier* of Tuesday last: ‘A young lady named Packard, died at Salmon Falls, on Tuesday last, by taking chloroform. She called at the office of Dr. Severance, to have a tooth extracted, and while the doctor was absent from the room, she used the chloroform, and when he returned, he found her dying. Whether she took it purposely or ignorantly is unknown.’”—*Boston Med. and Surg. Jour.*

“*Hiccough.*—In obstinate cases, make forcible compression for a minute or two, at the inner extremities of, or upon one or both clavicles. M. Geyser suggests that this may operate by its influence upon the phrenic nerve.”—*Braithwaite’s Retrospect.*

“*On some of the effects produced by Carious Teeth.* By Dr. ROBERT CRAWFORD, Peebles.—[The perusal of the foregoing practical lecture* on this subject by Mr. Smith, of Leeds, has led Dr. Crawford to record the following cases of a similar character, which have occurred recently in his practice, but which did not strike him at the time as being connected with the teeth.]

“1. R. S——, by occupation a coachman, footman, &c., to an old gentleman, called upon me two years ago to get something done for a sore on the centre of his left cheek. He said it had been a boil, which suppurated and broke about two months previously. His face was much swollen, and, as he had to wait at his master’s table, it rendered him unfit for his work. The patient had consulted another surgeon, and had tried various remedies, but could not get it healed. He was otherwise the picture of health. I thought it might be some chronic affection of the parotid gland, strumous or otherwise. I gave him some zinc lotion to inject into the opening, and to apply a bit of rag dipped into the same, and covered with oiled silk. In about three weeks, he came to tell me that the sore was healed, but his cheek was swollen. I gave him iodine to apply over it. There was an ugly cicatrix where the sore had been. In the course of another month, the patient came again, presenting an abscess ready to burst in the old place. I opened it, told him to poultice it for a few days, and then use the former treatment. In about three months, he called again, and told me that after he last saw me, being useless in his situation, he went home to Edinburgh, where he saw Professor Syme, who gave him something to use, and that the sore did not heal for six weeks after I opened it. The Professor told him that the sore arose from a wisdom tooth coming up, for which there was not room in the jaw, and advised him if the sore did not heal, or should trouble him again, to have the adjacent tooth extracted. His face was now much swollen, and an abscess was evidently forming again. I examined his mouth, and saw that he had got the upper wisdom teeth only, and that there was evidently a want of space for those below. I accordingly extracted the second molar tooth, after which, the swelling gradually subsided, and the wisdom tooth soon filled up the vacant space. He was now permanently cured.

“2. Some months before I saw the last case, R. T——, a forester

by occupation, came to me with a large abscess on the left cheek, about an inch above the angle of the jaw. I opened the abscess, and by using poultices for some days, and water dressing afterwards, the sore healed in about two weeks. Shortly after I extracted the tooth from case No. 1, I was again visited by No. 2. The abscess was now the same as before; but observing the similarity between the appearance of this case and the former, I examined his mouth and saw that he still wanted the wisdom tooth in the left lower jaw, for which there was evidently no room, and the gum round about was a good deal inflamed. It so happened, that a year or so before he came to me with the first abscess, I had extracted the second molar tooth in the right lower jaw for toothache, the place of which was now filled up by the wisdom tooth. I now extracted the same tooth on the left side, when the abscess broke into the mouth, and the wisdom tooth replaced the removed one as before. He has not been troubled since.

“3. A. T——, a dealer in tea, consulted me four months ago for a swelling on his cheek. I found that an abscess was forming. The treatment and result were the same as in the other cases, with the important exception, that, having recognized the nature of the case before the abscess broke on the cheek, I saved this patient from having an ugly cicatrix, as the other two unfortunately had, and will have as long as they live.”—*Braithwaite's Retrospect*.

“*Effects of Decayed Teeth*. By J. S. DIXON, Ashland, Tenn.—I may be thought egotistic in publishing my own case, but as a man can describe his own feelings better than another's, these are, I think, the cases that should be preferred for publication.

“I am aged thirty-three. During the years 1855-'56, I was in very delicate health, and several of my teeth became badly affected, though they seldom ached. In 1855, I was frequently affected with a severe neuralgia, or severe pain over my left eye, and the left side of my nose became affected with a constant dripping, which was very unpleasant, and caused me to fear ozæna; this became much worse, and during the last winter, I was obliged to remove large plugs of hardened pus and mucous every day with a pair of forceps; this pressed the septum narium greatly to the right side. During the latter part of the winter, my fauces became badly inflamed and ulcerated, and resisted every means of cure, including caustic gargles, tonics, &c. In April, the neuralgia returned more severely than ever, and resisted every known means of treatment. I then had all my carious teeth extracted by Dr. J. T. Collier, of this county, when my throat immediately commenced improving, and the discharge from my nose began to subside, since which, I have had but one slight attack of neuralgia; my throat is well now; the discharge has nearly ceased, and my general health has greatly improved, and I have used no medicine since the teeth were extracted. My bowels are now regular, and my appetite good, which has not been the case for the last two years. The septum narium still remains so much to the right of the median line as almost to occlude the right passage. I intend to try to rectify this.”—*Atlanta Med. and Surg. Jour.*

“*Jaws and Neck, Fistulous openings about the*.—In sores and fistulæ in this situation, always carefully look out for old carious teeth;

sometimes an old stump, with or without a sharp fang, will be causing all the mischief, and by extracting this, the sore will heal rapidly.

“These are frequently connected with carious teeth, and are never cured until the irritating body is removed; but they may also be from the irritation produced by wisdom teeth, when there is scarcely room for them; in these cases the remedy is, to remove the second molar, and the opening soon heals up.”—*Braithwaite's Retrospect*.

“*Cements for Stopping the Teeth*.—M. Vagner recommends the following: A drachm of gutta percha, softened by hot water, is to be worked up with catechu powder and tannic acid, of each half a drachm, and with a drop of essential oil. For use, a morsel is to be softened over the flame of a spirit lamp, introduced while warm into the cavity of the tooth, and adapted properly. The mass becomes hardened, and even after several months, exhibits no trace of decomposition. M. Pouton states that we may also obtain an excellent cement by dissolving one part of mastic in two of collodion. Having well dried out the cavity, a small ball of cotton, soaked in some drops of the solution, is to be introduced. It soon solidifies, and may remain *in situ*, seeming also to exert an influence on the further progress of the caries.”—*Rev. Med.—Braith's. Ret.*

“*Glycerine and Borax in Cracked Tongue*.—Dr. Brinton had under his care an inveterate cracked tongue, which (like that of the late Charles Matthews) had baffled all attempts at alleviation for many years. It could not be referred to any syphilitic poison, and rendered eating, and especially speaking, very painful. Dr. Brinton made use of a favorite remedy of his in such cases, viz: borax dissolved in a lotion of glycerine (Price's Patent Candle Company's) and water (two scruples, one ounce, and four ounces respectively.) It at once gave marked relief; and after a few days, during which it was the only remedial agent, the improvement seemed increased by iodide of potassium and bark, taken internally. The patient has now considered himself well, and discontinued the use of the lotion for some weeks, and the cracks are only visible as depressions in the mucous membrane.”—*Lancet.—Braithwaite's Retrospect*.

Sudden Choking.—“In cases of sudden choking, as from a morsel of food, place the patient, generally a child, between your knees, one knee (the right) pressing firmly on the stomach, and the other on the back; then place one hand on the back part of the thorax, and give a firm blow with the other on the sternum, the morsel will sometimes be expelled with force to a considerable distance. If, in the midst of the asphyxia, the excito-motor power fails, and the larynx is no longer spasmodically closed, employ the “Ready Method” to sustain life until a bougie can be made to push the morsel of food lower down in the pharynx or œsophagus. A firm scroll of cotton or linen, if carefully made and greased, or a thin bent tallow candle might answer this purpose.”—*Dr. Marshall Hall.—Braithwaite's Retrospect*.

“*Stammering, the Cause and Cure*. By the Rev. W. W. CAZALET, A. M. Cantab.—[With regard to the cause of stammering, we cannot do better than quote Mr. Cazalet's own statement.]

“The organs of speech may be divided into two parts, viz: those of sound, and those of articulation, the lungs forming the motive power in the production of sound, upon which, when produced, articulation acts. In the case of a person speaking properly, these elements of speech ought to meet at a certain point, the rima or opening in the larynx, and there combine to form articulate sound or speech. This is the natural action and condition of speaking. In stammering, the breath is stopped in its passage from the lungs by the forced efforts made to articulate. No sound can therefore be produced, every effort tending more and more to prevent the emission of sound and speech thus held in suspense. The difficulty increases with the exertion made, for as during these convulsions no sound can be produced, there is nothing for the articulation to act upon, and it is only when partial exhaustion takes place, and the articulating efforts relax, that the unhappy sufferer is at length enabled to speak. Having thus forced the organs into speech, in the anxiety to continue speaking as long as the power lasts, the lungs become exhausted of air, thus producing a collapse. In this state, the mere action of inhalation, during which the stammerer generally endeavors to articulate, is the approximate cause of succeeding spasmodic efforts.”

“In the cure of this defect, Mr. Cazalet proposes three principal remedial means, premising that reading is of course always to be resorted to. The first point is the attack of the sound, that is, ‘of placing the articulating organs in such a position as to modify the sound in the manner required.’ The second point is the management of the breath; and the third, the pitch of voice.”—*Lancet*.—*Braithwaite's Retrospect*.

“*Chlorate of Potass in Mercurial Salivation*.—Several trials made by M. Ricord, exhibit the power of this substance not only in checking mercurial salivation, after the suspension of the mercury, but even when this is continued and increased. Of still greater importance is its prophylactic agency; for in a considerable number of patients, some of whom were extremely susceptible to mercurialization, who took the chlorate from the commencement of the course, no salivation at all occurred.”—*Braithwaite's Retrospect*.

“*Iodate of Potassium in Affections of the Mouth*.—Induced by the great success that has attended the employment of chlorate of potass in affections of the mouth, MM. Demarquay and Gustin have tried the efficacy of the iodate of potassium in numerous cases of diphtheritis and gangrenous stomatitis. The success has been considerable, and that in some cases in which the chlorate has failed. The dose employed was from four to eight grains.”—*Med. Chron*.

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Ulcerative Stomatitis.—“Finally, we cannot forbear allusion to an important point in relation to the management of the teeth. We allude to ulcerative stomatitis, the cause of a vast amount of suffering in the way of tooth-ache and neuralgia of the jaws, and which only requires for its removal the use, for a few days, under the advice of a physician, of chlorate of potash. This is specific, but both the disease and the remedy seem to be unknown to some of the most skillful of the dentists. The following cases, out of some half dozen, have occurred to

us in less than a twelve month :—A young lady, after ten days' suffering from neuralgia with an inflamed tooth, in whom the alveolar process had been bored with the hope of opening into a supposed abscess at the root, together with a variety of other pleasant experiments, desired my advice before submitting to extraction. An examination revealed the neck of the tooth, exposed to its junction with the process, by ulceration of the gum; the tooth itself being elongated, loose and excessively tender from the periostitis which always accompanies the affection, but otherwise sound. A few days of the above treatment entirely and effectually relieved the difficulty. When, with a little justifiable malice, she informed the dentist of his mistake, the satisfactory reply was, 'Why, what a curious name for it; I never heard it before!' In December last, a Canadian gentleman wrote for advice as to 'pain in the teeth, jaws, and back of the head.' He adds, 'my teeth are in a horrible state, and I can with difficulty chew my food.' 'My dentist tells me my teeth are good and sound, but that the gums have somewhat receded, and he can apply no remedy. This is consolatory!' Sure enough. He was relieved in less than a week by chlorate of potash. Last spring, a patient in fine health, and with a most enviable set of nut-crackers, desired us to look at a tooth which had kept him awake several nights in intense pain, and for which, he had just been informed, the only remedy was extraction, though the tooth was perfectly sound. It was ulcerative stomatitis, nothing else, and a few days sufficed for its permanent relief. We mention these cases, in the hope that they may attract attention, and that a few *hints*, well put, will make persons think twice before either *advising* or submitting to the extraction of a sound masticator, the loss of each one being such a direct and irremedial injury to the digestive organs."—*Ex. from Rev.—Boston Med. and Surg. Jour.*

Neuralgic Pains, the relief of.—"The tincture of belladonna, when given in ten-drop doses to adults, relieves neuralgic pains about the eye, and even the pain attendant on internal ophthalmia, in the most astonishing manner."—*Mr. T. Wharton Jones.—Braithwaite's Ret.*

Facial Neuralgia and Toothache.—"A few drops of chloroform, on a bit of cotton, applied to the commencement of the meatus auditorius, often gives great relief."—*M. Simon.—Braithwaite's Retrospect.*

"Method of Promptly Relieving Facial and Dental Neuralgias.—This method consists in turning into the meatus auditorius from four to ten drops (according to the age and sensibility of the patient) of the following fluid; then to close the opening of the ear by means of a little cotton, and to cause the patient to hold the head inclined for some minutes to the side opposite to the seat of the pain, so that the liquid may remain in the bottom of the ear. This preparation is thus made: R. Take of the extracts of opium, of belladonna, and of stramonium, each *one part*; of distilled cherry laurel water, *twelve parts*. Dissolve and filter.

"Although this preparation may be only extemporaneous, it may nevertheless be preserved, if care is taken to keep it cool, and to pour on its surface from two to four drops of sweet almond oil.

"It is very rare that, with the use of this liquid, relief is not obtained in a few minutes; indeed, the patient is almost always asleep in half an hour, whatever may have been the severity of the pains, and that without having been in the least danger.

"Absorption takes place almost as rapidly as from a denuded surface, and it is therefore unnecessary to blister the patient when we wish to use narcotics, since they act almost as rapidly by the auditory passage.

"If it should happen that, at the end of eight or ten minutes, the pain does not yield to the remedy, (which sometimes happens when the quantity used has been too small, or when we have to treat a neuralgia which has already required the use of narcotics in any way,) it is necessary then to use a second dose, at least equal to the first, but in the opposite ear, in order to obtain promptly that relief which is only too frequently momentary in facial neuralgias of long standing.

"The preference which I give to this aqueous solution over those which contain alcohol, such as laudanum and other narcotic tinctures, arises from having used both upon myself for several years for a facial neuralgia, and observing that the latter produce a sensation of quite acute pain at the moment of their use, and not being always as successful as the former, which causes neither heat nor smarting, and is more certain in its effects."—MICHAEL ANDRE, in the *Revue de Thérapeutique*, in *Amer. Med. Monthly*.—*Charleston Med. Jour.*

"*Valerianate of Ammonia in Neuralgia.*—For some time back, Dr. O'Connor has been prescribing, with success, the valerianate of ammonia in cases of neuralgia under his care at the Royal Free Hospital. It has also been given in a few cases of epileptoid disease. In one case of paralysis of the facial nerve which did well, there was considerable pain along its course, sometimes of a very excruciating character. The valerianate of ammonia was administered with benefit, and in a very short time the patient got well. This remedy has been freely used in the Parisian hospitals, but especially at the Salpêtrière and the Bicêtre; and Dr. Tuffnell, Professor of Military Surgery in Dublin, has also tried it, and found it eminently successful."—*London Lancet.*

Valerianate of Ammonia.—"M. Pierlot's formula: Distilled water, 32 drachms; valerianic acid, 1 drachm; subcarbonate of ammonia, q. s. To neutralize the acid, add alcoholic extract of valerian, 2 scruples." There seems to be some virtue in the medicine. "Dr. Desmarres describes a case of intense choroiditis, in which, after considerable depletion and low diet, severe paroxysms of neuralgia supervened. Doses of a grain and a half of sulphate of quinia seemed merely to exasperate the pains. He then tried Pierlot's solution of valerianate of ammonia, in doses of three coffee-spoonsful per diem; and the first day, the pains so far remitted, that the patient obtained a tranquil sleep, and in a few days more, he quite recovered his appetite."—*Ex. from Dublin Hospital Gazette.*

"*On the value of the Red Line of the Gum in the Diagnosis of Phthisis.* By Dr. SAUNDERS, and Dr. J. C. DRAPER.—Dr. Theophi-

lus Thompson, in his work on pulmonary consumption, in speaking of this red line, says : ‘ Considerable attention to this inquiry has impressed me with the conviction of the frequent existence, in consumptive subjects, of a mark at the reflected edge of the gums, usually deeper in color than the adjoining surface, and producing a festooned appearance, by the accuracy with which it corresponds with the curve of the gingival border ; this mark is in some patients a mere streak, in others, a margin, sometimes more than a line in breadth. In the most decided cases, this margin is of a vermilion tint, inclining to lake. As a general rule, the line is most distinct round the incisor teeth, but it is frequently apparent also round the molars. Dr. Saunders and Dr. J. C. Draper are not without a suspicion that the form of the mouth influences the direction in which the margin is most obvious ; patients with a long upper lip applied closely over the jaw, often presenting around the incisors either no line, or one only slightly marked, while around the canine teeth, this margin is well delineated. In toothless individuals, when the gums smoothly cover the sockets, no mark is observable, but when the imperfect stumps remaining prevent the smooth adjustment of the surface, the streak is found.’ ”

Here follow some tables of statistics, the object of which is to “ test the utility of the red line as an element in the diagnosis of phthisis,” from which the following general conclusions were drawn :

“ 1. The red line, though it occurs frequently in phthisis and chronic blood-diseases, is by no means characteristic of them.

“ 2. In pregnant and recently-delivered women, the line occurs more frequently and better marked than in any cases examined, and may, perhaps, deserve consideration in connection with that condition.

“ 3. That age or sex exercise no influence on the existence of the line.”—*New York Journal of Medicine*.—*Half-Yearly Abstract*.

Colorless Blood Globules.—“ Kölliker’s researches confirm the view which is being more and more generally adopted, that the colorless blood globules are formed in the spleen ; and partly in that organ itself, partly in the liver, partly in the blood, are transformed into red globules.”—*Brit. and For. Med. Chir. Rev.*

Mental Health.—“ A very able article, by Dr. Bucknill, in the April number of the *Asylum Journal*, is devoted to the consideration of the relation of mental pathology to the physical agent of the mind. The path which the author pursues is, to our appreciation, one of legitimate induction ; and we cannot but think that the physiological principles upon which he builds his superstructure, are correct in the main. The essence of his views may be given in his own words :

“ ‘ Mental health is dependent upon the due nutrition, stimulation, and repose of the brain : that is, upon the conditions of the exhaustion and reparation of its nerve substance being maintained in a regular and healthy state ; and that mental disease results from the interruption or disturbance of these conditions.’ ”—*Brit. and For. Med. Chir. Rev.*

Alcohol preventing Healthy Transformation of Tissues.—"Professor Casper records, as his not rare experience, that the bodies of drunkards perishing in an excessive debauch, show an extraordinary resistance to the progress of decomposition; and he agrees with Percy, as with the more recent observations of Buchheim and Duchek, in asserting the customary imbibition of alcohol into the tissues. 'Here,' he remarks of such cases, 'the whole body is, as it were, immersed in spirits.' Let us add to this, the equally often recognized existence of the fatty conversion of the tissues, so conspicuously observed in the bodies of drunkards."—*Brit. and For. Med. Chir. Rev.*

Fluidity of the Blood in Asphyxia.—"While adverting to the remarkable fluidity of the blood, as common to all kinds of death by asphyxia, whether drowning, hanging, throttling or garroting, he points out that it is by no means peculiar to this form of extinction of life, but occurs also in other circumstances, as in putrid fevers and narcotic poisonings."—*Ibid.*

Phosphate of Lime.—"If pure phosphate of lime be formed and deposited under the same conditions as those mentioned in the process, for obtaining the globular carbonate of lime, it does not lose its crystalline character, although its crystals congregate in globular masses; but if a small quantity of carbonate of lime be formed at the same time as the phosphate, these blend together and produce a compound, resembling in its form and mechanical properties, the globular carbonate of lime. The white of egg contains sufficient alkaline carbonate for that purpose; so that if phosphate of soda and muriate of lime dissolved in separate portions of white of egg be brought into contact and allowed to mix very gradually, a mixture of phosphate and carbonate of lime will result, of a globular form. This compound is not so homogeneous as that of the unmixed carbonate, but its optical and physical characters are very similar.

"From this experiment it would appear that the carbonate of lime, found always in combination with the phosphate, (as in bone, dentine, &c.) serves to prevent the crystallization of the phosphate, and to cause its particles to coalesce and to blend with other structures—a property which this carbonate has been shown, by its action on glass, to possess in a remarkable degree—and thus to bring the earthy component of bone under the same conditions necessary for the coalescence of its particle as have been shown to exist in respect to shells. * *

"That which is called membranous ossification appears in principle to be the same. The canals of Havers, large at first, become gradually contracted in their calibre by alternate layers of membrane, corresponding to cartilage in their process, and bone more or less intimately blended together. Hence the appearance of the two structures described by Tomes and DeMorgan, as seen in thin transverse sections. Probably the globular dentine described by anatomists is merely the form which the dentine assumes after the coalescence of its primitive particles, corresponding, in this respect, with the nodulated rings, described in the recently formed bone of the frog; and the dentine canals will perhaps prove to be merely longitudinal spaces, existing in dried sections of teeth, between portions of perfectly formed dentine,

arranged with different degrees of obliquity around the central pulp cavity. Passages of precisely the same character exist between the analogous portions of enamel, and which are also considered by some as distinct tubes. It is possible that the coalescence does in some instances proceed so far as to produce a circular space entirely surrounded by dentine; but this is probably only an exceptional circumstance, as it does not comport with the function of tubes generally, that a system of such organs intended to convey nutritious matter, should either proceed from or terminate in a mere cellular interval, like the *cavitas pulpæ dentis*, destined to convey blood-vessels, nerves, and their connecting areolar tissue. As respects the medium by which the earthy components of bone are brought in a fluid state to the cartilage or membrane, where the ossification is going on, there to undergo such decomposition as shall result in the formation of the coalescing compound of lime, it may be observed, that in one respect the bone, or osseous tendon, above alluded to, of the crab, is circumstanced the same as shell, its membranous covering being, like that of shell, moistened with a solution of carbonate of soda; and in another the same as ordinary bone, for the part on the opposite side of this covering not being, like that in shell, accessible to the fluid medium in which the animal lives, the soluble salts of lime cannot reach it—consequently these salts must be brought into the vicinity of this membrane by some other route. Now as the circulating fluid is intended to introduce into the body the substances of which it is composed, the route for the conveyance of the salts of lime may be inferred, in this instance, to be the blood-vessels, and the medium the fluid contained within them. Hence, considering the physiological resemblance, and similarity of the anatomical relations of these structures, there is no improbability in supposing that, as the soft parts contiguous to the dense structure do in the one possess the power of eliminating an alkaline carbonate, a like power should reside also in the corresponding parts of the other; and with respect to the formation and deposition of the earthy components of both these structures, the conditions are precisely the same, the animal to which each belongs being provided with a vascular system. A more complete examination of this question would require further experiments and chemical analyses.”—*Ext. Rainey on the Elementary Formation of the Skeleton.—Brit. and For. Med. Chir. Rev.*

Anatomy of Expression.—“Many interesting facts have been evolved from the application of elicticity to the study of the functions of the muscles of the living body. It has become possible to create so a kind of living anatomy. It is true that the deep strata of the muscles, covered by the superficial ones, will not clearly exhibit their contraction. But here pathology has seconded physiology. It is chiefly muscular atrophy, terminating in fatty degeneration of the muscles, that, by destroying the superficial muscles, takes away the impediments to the electric current, and thus helps to the knowledge of the function of every muscle in the living body. * * *

“Dr. Duchenne has given a special study to the function of the muscles of the face, to know the mechanism of the physiognomical expressions. It is true, that although these muscles have a very small

surface only, electricity can be localized in every one, so as to produce isolated contractions. The way to show most clearly the part every muscle takes in the different physiognomical expressions is, to electrify the muscles of the face of a man who has just died, and whose muscles have yet retained their irritability; for the living man, when electrified, always mixes involuntary movements, not connected with the contraction of the electrified muscle, an impediment, of course, to the observation of the individual action of the muscles. It is, indeed, very interesting to see on a dead body all physiognomical expressions produced, for it is only the muscles which are put in action by thoughts, passions, and character; they preserve, during the muscular repose, the predominance of tonic force, and stamp on every physiognomy its peculiar impression. If there was not in every face tonic predominance of this or that muscle, all physiognomies would be like each other, as the muscles have the same direction, attachments, and strength, and the bones only differ from each other by their volume. So the frontal muscle, when slightly contracted, cheers up the face; more contracted, it expresses doubt, surprise; in the highest degree of contraction, and united with some other muscles, it gives the expression of an agreeable surprise or of terror; it also wrinkles the forehead, and, when paralysed, the wrinkles disappear.

“The pyramidales nasi, which are in intimate relation with the frontal muscle, and therefore considered by many anatomists as only one muscle with the frontal, in their physiognomical action too, nevertheless are the antagonists of the frontal muscle; they give a sad expression, and, when more contracted, a threatening one. It forms a striking contrast to see these two opposite movements produced in so small a space as the level of the eyebrows.

“Isolated contraction of the orbicularis palpebrarum and corrugator supercilii expresses reflection; united to the pyramidalis, they express malice. The platysma myoides gives the expression of pain; united with the frontal muscle, it expresses terror; and with the pyramidalis, rage. Contraction of the triangularis nasi gives the expression of lust. The zygomaticus major always expresses mirth, from simple smiling to the most extravagant hilarity; united with the frontalis, it gives the expression of an agreeable surprise; with the platysma myoides, the sardonic laugh. The zygomaticus minor, on the contrary, gives the melancholy air. The levator alæ nasi and labri superioris is the real weeping muscle of children, and produces a very ugly grimace. By the contraction of the external fibres of the orbicularis oris, the lips are everted forward as for kissing and whistling; the internal fibres apply the lips against the teeth, as is done, for instance, by players of the clarionet for pinching the reed of their instrument between the lips. The levator menti is the only muscle in action in persons who repeat their prayers inaudibly in Catholic churches. The triangularis oris expresses sadness; in children it is the precursor of tears; in the maximum of its contraction it expresses disgust.”—*London Lancet*.

“*Abscess of the Antrum*.—This affection is sometimes liable to be confounded with the last mentioned, (the frontal sinuses.) If, however, the attack is acute, and of any moment, there will seldom be any dif-

ficulty in the diagnosis. It is important, because its consequences are sometimes serious. Deformity may result which will mar an otherwise fair face. Nor is this all; a persistent caries may occur, which may even endanger the whole superior maxillary bone. Meantime, the patient's nose and throat may be deluged with an offensive and disgusting discharge. An intolerable odor accompanies this, equally annoying to the sufferer and attendants. Moreover, we should the sooner take alarm at any symptoms pointing to the antrum, since it is so frequently the seat of morbid and malignant growth.

Causes.—Perhaps abscess of the antrum is most frequently excited by carious teeth adjacent to the cavity. Persons having decayed molar teeth are liable to a persistent toothache, eventually terminating in abscess of the antrum. This affection has sometimes been attributed to blows received upon the cheek. Inflammation of the schneiderian membrane at times results in the same way. Sometimes the natural communication between the nose and antrum becomes obstructed, and inflammation of the membrane lining the cavity occurs. There are some persons in whom there is a decided tendency to affections of the mucous membrane of the head,—and this is not unfrequently hereditary. Such persons are liable to abscess in the cavities mentioned. Besides these, it is possible that secondary syphilis may be a predisposing cause.

Symptoms.—Abscess of the antrum is characterized, when acute, by a throbbing and lancinating pain. If the case is severe, the pain extends to the nose, eye and forehead; the cheek becomes swollen and tender; it is red and hard. Pus at length forms, indicated generally by rigors. The constitutional disturbance is usually considerable. If the opening into the middle meatus has not become obstructed, the pus escapes. Frequently the mucous membrane is so turgid that this channel of communication is entirely closed. Possibly the pus may partially escape by the side of a carious tooth; it is not by any means certain, however, that this will occur. If the pus fails to make its escape by either of these channels, it accumulates, and great distension of the antrum is the result; the cheek becomes more inflamed, and the over-distension of the antrum at length expands the bony walls. The external surface may now be greatly swollen, and the bony wall so thin as to crackle on pressure. The orbital, buccal, palatal or nasal wall may be thus expanded. As the consequence of such an expansion, the eye may be protruded from its socket, the lachrymal duct closed, and the tears flow over the cheek. The mouth and nose may be encroached upon in the same way, and great discomfort attend the patient. At length the antrum bursts, and an exceedingly offensive fluid escapes into the orbit, the nose, the mouth, or upon the cheek. If the affection is chronic, it is characterized by symptoms less severe; but the distension occurs, and the result is the same. In either case, if art has not interfered, caries of the bone is likely to occur, and more or less of the bony substance is lost.

Treatment.—Abscess of the antrum is one of those instances where pus should be evacuated early. When once satisfied that suppuration has occurred, it should be the aim of the Surgeon to evacuate the fluid as speedily as possible. Even if it is somewhat doubtful, it is better to err on the safe side, and open a communication with the diseased

cavity; otherwise the osseous structure may become involved, a result always to be deprecated.

Various methods have been proposed for effecting an opening into the antrum. Sometimes, though rarely, the pus escapes into the middle meatus, and a spontaneous cure results. More commonly the interference of art is called for. If there is any carious tooth in the vicinity, it should be extracted; and if its socket does not already communicate with the antrum, an opening should be made by introducing a stile or small trocar into the socket, and forcing an opening through the intermediate bone. If the teeth are all sound, and the symptoms such as to warrant the supposition that pus is present, the second molar tooth may be extracted and the channel completed as before. The pus is likely to be thick and offensive. The cavity may be injected with tepid water, and the discharge otherwise promoted. If the walls are beginning to expand, an opening may be made through the most prominent one. Should the external wall suffer the most, the lips may be drawn back, and the gum being divided over the canine fossa, an opening may be made directly with the stile or trocar. The same operation may be performed upon the roof of the mouth, and even upon the orbital wall, if occasion requires. Under any of these instances, the cavity should be injected with tepid water, and gentle pressure applied over the expanded bone, to reduce it to its former limits. Usually the recovery occurs without much trouble. If, however, the inflammation is of a low type, and the discharge is persistent, the cavity may be treated with a solution like the following:

R.	Zinci Sulph.	ʒi
	Aq. Distil.	ʒvi
	M.	

Inject twice a day.

This may be continued until a healthy inflammation is excited, and the discharge begins to diminish. Nitrate of Silver, and some other substances, may be used in the same way. Caries of the bone is quite likely to occur if this affection has been neglected. This may be determined by a careful exploration with the probe. The carious pieces of bone should be removed only with great care, and not until entire separation has occurred.—*Dr. A. B. Crosby.*—*New Hampshire Journal of Medicine.*

“*Death from Amylene.*—There has been another death from the new anæsthetic, amylen. It occurred on Thursday last at the St. George's Hospital. Dr. Snow administered the agent. The patient was a man who had a fatty or some other benign tumor on the back, and it was in consequence of the operation about to be undertaken for its removal that the anæsthetic was administered. We are not yet informed what condition of the organs of circulation and respiration were discovered at the autopsy. This is now the second death from amylen.”—*Lancet.*—*Med. News.*

“*Sulphate of Copper in Glossal Cancer.*—We have watched very particularly the treatment at the Cancer Hospital of cancerous ulceration of the tongue, distinguished by its deep, excavated character,

with sometimes fissures running from its sides and irregular puckering, and very generally preceded by nodular enlargement, with difficulty in the use of the organ. Who amongst us has not felt the sensitiveness of a little pimple on the tongue, arising from a hearty supper on the night before, or from some slight indigestion? These small pimples often feel very sore and tender. If they are contrasted with the pain and embarrassment in the use of the tongue affected with malignant ulceration, an idea will be gained of the really terrible nature of the latter. Patients with glossal cancer seem to resign themselves with great fortitude to their sufferings, and it is a gratification indeed to the humane surgeon to find his measures afford relief. Now, of the various substances employed by the surgeons at the Cancer Hospital as a local agent, none appear to have so much control over the ulcers as powdered sulphate of copper. This substance is very efficacious in cancer of the tongue and cheeks. It is applied by means of a camel-hair pencil, generally twice a day, and allowed to remain four or five minutes; the mouth is then freely washed out with tepid water. It produces some pain, but this is willingly borne when the relief is found to be so great; and an excellent wash of borax, half an ounce to a pint of water, used frequently during the day, keeps the ulcer and the tongue clean and fresh looking. Under the use of the copper, we have seen the ulcers slowly heal up and cicatrize, and a return to comparative comfort, as contrasted with the patient's previous condition.

"On the 25th of August, a man from Farnewood, Matthew T——, aged sixty-two, presented himself for the first time, with a deeply excavated, cancerous ulcer of the right side of his tongue, extending towards its base. It had been existing for two years, and fears now were entertained that the disease would extend to the roots, and destroy the organ and the patient's life. The treatment adopted was that we have described, with the addition of a soda powder twice a day for a week or ten days. We have no doubt that this plan will prove of service here, as it has already done in so many others.

"Powdered sulphate of copper is an agent of great value, which cannot be overrated in these painfully distressing cases. We may remark, as a rule at this hospital, anodynes are avoided as much as possible, and pain is sure to become less under the sustaining treatment so commonly the practice here."—*Lancet*.—*Med. News*.

Sir C. Locock states, "that dentition is a very common cause of epilepsy, and that he had certainly seen the affection cured in more than one instance by removing overcrowded teeth."

Mr. Jabez Hogg says, "that a large number of cases of amaurosis take their origin, not in the eye, but in the sympathetic irritation excited by disease of near or remote organs, such as caries of the teeth, etc." He also observes that "numbers of cases were called cancer, treated as such, and said to be cured, which were, in reality, benign tumors. He related a case of supposed cancer of the tongue. The disease, however, was found to be caused by pressure from decayed teeth. The teeth were removed, tannic acid applied to the so-called cancer, which was perfectly cured in a fortnight."—*London Lancet*.

THE DENTAL NEWS LETTER.

VOL. XI.

PHILADELPHIA, APRIL, 1858.

No. 3.

ON TAKING CASTS.

[We doubt not but that the following is a very good method of obtaining a complete fit of an atmospheric pressure plate, and would recommend it to be carefully read. We would be very glad to receive from Dr. Sanborn an article on the evils of extracting too many teeth at one sitting, as we hold that a great deal of injury is often inflicted on the patient by it.]—ED.

For the Dental News Letter.

MESSRS. EDITORS:—In consequence of some remarks which I made at the late Dental Convention, in Boston, in relation to my method of taking casts, for striking up and adjusting plates to gums for teeth, I have received from various parts of the country many letters soliciting further and more definite instructions. As the labor of adequately responding to all by individual answers would be quite too onerous, I have taken the liberty to promise that I would prepare a more definite description of the *modus operandi*, together with some other suggestions, and offer it for a place in your valuable journal, if you think it worthy of publication.

Experienced dentists need not be told that no other profession requires more genuine native skill and aptitude for construction and adaptation than theirs; nor that there is not known to their noble art any possible fixed form or method by which the hand, without “cunning” or skill to daub only with *untempered* mortar, can ever realize honorable distinction, pecuniary emolument, and, more than all, the final consciousness of having lived a blessing to mankind.

There is to all a most obvious appositeness to this subject in Pope’s well-known remarks on “Forms of Government and Modes of Faith:” “That which is best administered is best,” and “His can’t be *wrong* whose [work] is in the right.” Still there are conditions, sometimes of vast importance, in almost all forms, modes, and processes, which often escape the notice even of the most attentive observer and thwart his purposes. These conditions appear to me especially obvious in the

want of a more exact and scientific knowledge of the entire *powers* and *capacities* of the materials used. An honest old farmer of my acquaintance was never known to use an oath or swear, except—"By the powers of mud!" which he did almost hourly, and the unrivalled productiveness of his farm conclusively proved that no man better understood his subject, or had a better right to swear thereby than he.

I will turn now, however, directly to my original design, namely: to speak of the powers of plaster, lead, tin, &c., to furnish dies for striking up as perfect suction plates as can be procured by much more laborious and complicated means. The only secret or difficulty is in having each article elaborated, matured, or tempered to its highest point of perfection or power of harmonious co-operation, at the exact moment of being applied. Plaster mortar, for example, at the moment of being applied for taking an impression of the gum, should be elaborated or matured to its last point of plasticity before setting. For this operation take about two heaping table-spoonsful of plaster and two of pure water, more or less, as the case may require, in a small bowl; the mixture should be at first much thinner than will be ultimately needed; now beat it until it assumes an almost entirely new feature, an appearance of cohesiveness and plasticity approaching stringiness, but will still spread like well-tempered butter, although almost on the point of setting. Transfer it now quickly to the already selected mouth-cup, and press it firmly to its desired depth upon the gum of the patient, who is supposed to have been previously admonished to breathe through his nostrils during the operation, &c. It conforms instantly to every peculiarity of contour of the jaw, and as instantly hardens, and may in one minute be taken from the mouth, oiled and filled, say two inches high, with new similarly tempered plaster mortar for the counter cast, which may be kept in due bounds by a paper wall. In a few minutes it may, by a light tap of a small hammer, be started and taken from its matrix a perfect model of the jaw in question. Now trim it taperingly from the top downwards, and add, with a camel's hair brush, and paste of whiting and water, whatever form may be desired for an air-chamber. Next is wanted its facsimile in tin, which is to be taken from a new matrix made by plunging it into lead elaborately tempered down from a high heat approaching redness to the lowest possible point of temperature, before returning to its original hardness. Half a dozen or more sheet iron pans of various sizes, from two to four and a half inches square, and uniformly one and a half inches deep, are thought indispensable by all dentists in

the habit of using them. The largest pan named above is suitable for the model of the largest jaw which occurs. It contains about eight pounds of lead, with which we now proceed. Suppose it just heated to a degree considerably above the melting point, and set in sand or a suitable place for being stirred and tempered down, for doing which nothing is better than a pine shingle two-thirds as wide as the pan. Keep it constantly moving from side to side and crosswise through the molten mass, always reaching the bottom. The first appearances of cooling are in granulations around the edges, which must be carefully scraped into the centre. Soon after this the whole mass seems partially granulated, at which novices are in haste to plunge in their plaster models, by which their labor and perhaps castings too are lost. The adept, however, now doubles his diligence, scraping in every granulating particle from the edges of the pan, rapidly passing his shingle through the whole stiffening mass. Now it may be piled up like hasty pudding in the middle of the pan, and still uncooled liquid lead remain around the edges. It is at this point an object of most intense interest. It is a mass of one of the most common metals, so elaborated, so evenly and harmoniously tempered, that almost every individual particle is mutually ready with every other particle, on the application of a very slight chill, to "presto change," from an almost semi-fluid, soft and impressible state to one of unyielding solidity, and still seemingly willing to linger just another moment longer to take to itself any impression by which the faithful artist may be facilitated in his labors. But all is ready. Now bring the whole body of lead to a level in the pan, and while the quicksilver glow yet remains on its surface, press steadily down to a desirable depth your faultless model of the jaw. Every particle of yet flowing lead hardens as it receives the impress of the descending form, and is almost instantly in concert with the whole mass in a state of "fixedness." The model, if rightly shaped, may now be lifted unharmed from its place before cooling binds it more firmly in, and serve, if necessary, for a second trial. When cool, the matrix may be lightly painted with whiting and surrounded by a strip of thin sheet lead, say two inches high, and melted tin prepared in another pan, and when tempered down to a granulated, but still flowing state, poured slowly in to fill it up. Its temperature being so low it readily cools on coming in contact with the lead, so that if the surrounding wall is not very close there is no great danger of its running astray through the crevices. For greater security, it is well before marring the matrix by striking up the plate, to take duplicate dies in type metal, which is harder and cheaper than tin,

and *now* so easily done. The tops of pans should be slightly larger than their bottoms, so that the lead when cooled may be easily dropped out, in case the same pan is wanted for other meltings. Otherwise, *strike* the plate up in it with a heavy hickory mallet, and when it is found to fit exactly, not only each other duplicate die, but the original plaster model, and more than all, to adhere with all desirable tenacity to the jaw of the patient for which it was made, it will probably be admitted that there is more than is generally suspected in perfectly elaborating and ripening the *material* with which we operate. Allow me to say, in conclusion, that by this method I can obtain, in two or three hours, more perfect adjustment of plate to gum, than I have formerly been able to do by other methods in almost as many days. Practice and patience may render it familiar, and I confidently believe invaluable, to those of the profession who have never yet tried it.

Yours truly,

EASTMAN SANBORN.

P. S.—If it were not for unduly extending this article, I would offer a few suggestions on the proper use and treatment of whole sets of artificial teeth, and especially the evils which may be inflicted by the extraction of too many natural ones at one sitting, and give some idea of the nervous prostration I have personally endured, for some three or four years, in consequence of having thirteen deeply set teeth and roots removed in about half as many minutes, although most skilfully done. If, instead of subjecting my nerves to the truly shocking disrupture at once, I had eked it out to four different operations, with intervals of a few weeks between each, I should be now firmer in health and constitution, with a less doleful story to tell of the past.

The usual importunities of patients to have the long dreaded clearance of their old mouth incumbents “all over with at once,” to make room for the fondly anticipated substitutes, should be listened to with great caution, and their age and physical ability to bear the shock be most carefully considered. Among many of my own personal experiences is the following:—I had two superior and two inferior bicuspid removed; they were the only teeth which had antagonized for years. Whenever my jaws without my artificials are now closed to the nearness at which these grinders formerly met, I seem to feel them still meeting, as though remaining in all their former powers of usefulness.

Yours, &c.,

E. SANBORN.

Andover, Mass., 1857.

For the Dental News Letter.

ADHESIVENESS OF GOLD.

BY LOUIS JACK, D. D. S.

It is now over two years since the adhesiveness of gold foil was placed before the attention of dentists in a practical form; in a manner which enabled them to make use of this property as a valuable aid, which had been previously considered a stubborn disadvantage. Sometime before this, public attention had been called to this property of gold, as it had been observed in foil, while fresh from the hands of some manufacturers; but no considerable use was made of it until Dr. Arthur explained the manner to secure the greatest adhesiveness of which any given specimen is capable, and the best method to secure good operations in plugging teeth with it when placed in this condition.

This adhesiveness of gold foil has, however, been recognized for a considerable time by manufacturers of the article, and to prevent it, they have been obliged to resort to means which, although some of them admit, none will frankly disclose. The complaints that came from their patrons, in the unintelligent terms of "stiffness," "harshness," "disposition to choke," &c., were attributed to this property, which led some of them, at least, to overcome this apparent defect.

Since the objection has been made by some, that any other than a mere mechanical union can affect to join the layers of adhesive gold when packed together, it is proposed in this place to meet this objection, to make plain its incorrectness, and to explain the highly probable and very simple reason of this adhesion. At this time, any arguments either for or against the propriety of taking advantage of this property of gold foil is disclaimed.

The mechanical union, which has been maintained to be the only bond, is described as the simple packing of the layers of gold within the pits made by the plugging instruments. With this question, on such grounds, we have nothing to do, as it is not pertinent to the subject. But, is there any adhesion between pieces of pure gold of flat surface, when brought into contact? If so, can there be any interlocking of the surface of the substance? And when by pressure, this adhesion becomes so great as to defy any effort to separate them, does there not exist a greater binding force, a different union than mechanical application, or of atmospheric pressure?

It is necessary now, before this subject is discussed further, to describe the character of gold foil greatly manifesting adhesiveness, and to state the cause of the variableness of different specimens of foil

in this respect. This quality will be found to be more apparent in all gold of a light color, and greatest in gold of absolute purity. The lighter foils of the market possess it to a much greater degree than the darker kinds; this can be satisfactorily decided, by the simplest experiment, by any one so disposed. The deep color worn by some foil, is an effect following the means used to overcome this adhesion. This difference in color is very apparent between adhesive and non-adhesive gold in the foils manufactured by the same person. The gold of those makers who have prepared a pure article, without possessing the secret of "doctoring" their metal, reflects a light shade, and is invariably very adhesive, and works harshly under the instrument when used in strip or rope.*

When a piece of foil is heated to a bright heat, if its color becomes no deeper it will be adhesive; but if the shade be reddened, or made quite red, as some will be, this property will be found nearly, if not altogether absent. This difference of color it has been said by those qualified to know, is caused by the presence of iron in minute quantity. But, without this testimony, the fact is clear, that there must be some extraneous substance combined with the gold when this change of shade is revealed, as pure gold is incapable of oxydation even at a high temperature, and must always have the same qualities in every respect, unless it is an exception to all other substances in a state of purity.

Now when a sheet of pure gold, of light color, fresh from the hands of the manufacturer, or freshly annealed, is laid upon another, and pressed upon it, they cannot be separated; if a clean surface is maintained, layer upon layer may be effected indefinitely, until a thick plate is formed; it may then be folded up, hammered out and drawn into wire; or, in fact, may be worked into any form with all the appearance of solid gold. Further than this, two pieces of this gold of considerable thickness can be made to unite in the same manner. In this way I have, without exercising much care, joined the ends of pieces of plate and of wire. The gold beaters are in the habit of lapping the edges of two scraps of "ribbon," and joining them by a blow; of the piece so formed, they beat out a perfect leaf of foil; also when a hole forms in a leaf during the process of beating, they cover it with a small piece, resume their labor, and complete the sheet; thus closing the rent. Many other illustrations occur of the practical effects of this property.

* The author has been assured, by the best authority, that in the manufacture of adhesive foil, the gold is rendered as pure as possible, while in the other foil something is added to overcome this property.

It cannot longer be maintained that these effects are merely mechanical; were this the case, the gold need not be pure, as great adhesion would take place between the layers previous to annealing. As the form of all substances in the whole, or in their minutest parts, is highly geometrical, it must be that the forces and motion governing all matter, is mechanical in the highest meaning of the term; but this has not been meant.

From the experiments cited above, it is conclusively seen that the adhesion of particles, or layers of gold, when brought into actual contact, is truly a cohesive attraction of the particles. Cohesive attraction is defined as that affinity which one atom of a substance has for the neighboring atoms; by virtue of this attraction affecting all the molecules, the integrity of the mass is maintained; should this force be diminished, the substance would be more easily divided, and were it entirely removed the mass would fall to powder, by an accidental disturbance, or even by the force of gravitation.

This affinity cannot be in its full force in any substance unless it be pure; any alloy or admixture of any other substances causes reduction of this power. The slightest enfiling of the particles too, must prevent them from coming into that contact necessary for union, and nothing is so active in the separation of particles of matter in this way as oxygen. There are, however, at least two metals proof to its affinity in their natural relations, and it is only these metals, which are capable of what may be properly termed cold welding; these are gold and platina. And a true estimation of the principles governing the cohesion of matter, with a just regard of facts, will present several, if not all metals, capable of uniting without heat. The rule is, that the *difficulty of adhesion increases in proportion to their affinity for oxygen*. The ductility and malleability of metals, likewise observe the same law.

This adhesion is very apparent in pure gold foil, as has been demonstrated above. It is fully exemplified also in the manufacture of platina ingots, and the common experiment with lead balls is an additional well-known instance. These balls have each a flat surface of an inch diameter turned upon them; these surfaces are then pressed firmly together, with a slight twisting motion at the same time; they become so firmly attached that a considerable amount of force is insufficient to separate them; but if they are struck together with a hammer this result will not ensue.

By virtue of the same power then, by which the molecules of matter are bound together, will the clean unoxydized surfaces of any sub-

stance adhere firmly to each other if brought into actual contact. A multitude of examples might be brought forward from the common arts, in substantiation of this theory. The use of flux in welding iron, in melting metals, and in soldering, are corroborative illustrations of the influence of oxygen to prevent the union of metals. If the lead balls adverted to above, are, instead of being joined at once, laid aside until slight oxidation takes place, they will not unite until by repeated twisting the pure metal is rubbed to the surface; the union will then be incomplete. Again, in the preparation of tinned and zincd iron, it is first necessary to clean the surface of the sheets, when they are plunged in a bath of the melted metal, and emerge wearing a permanent coat. In electrotyping, if a plate of any metal incapable of decomposing the solution, is coated with gold, silver or copper, after being slightly oxydized, or after having lain exposed to the atmosphere for a day or more, the coat can be removed with ease; but if this surface is made clean in the one case, or heated in the other, the deposited metal is inseparable. Mr. Smee accounts for this non-adhesion in the latter case, by saying that the metal becomes enfilmed with air, and that by heat this is dissipated.

When *pure* gold foil is first annealed by the maker, it is very adhesive, as has been shown; but this condition passes away, to a considerable extent, after a few hours; whether or not this is due to the presence of moisture, or caused by a film of air, certain is it that a slight degree of heat fully restores this property. This then is the object of re-annealing gold foil.

When gold is prepared by the method used to obviate all adhesiveness, it becomes a shade darker during the process of beating, from the slight oxydation which even then takes place. When it is annealed this becomes more apparent; in some cases amounting to the redness of copper, if it is heated highly a second time. Now this can be caused only by the oxydation of some extraneous substance. It is this slight oxydation which overcomes the adhesiveness, agreeably to what has been demonstrated above.

When adhesive and non-adhesive foil of the same manufacturer are compared, the first named will be seen to be closest in texture, thus revealing a disposition to separation of the particles in the latter.

It is not supposed that this alloy, if alloy we may call it, is in sufficient quantity to impair either the appearance or the durability of foil so manufactured. On the contrary, it is impossible to use the rope or strip with facility in filling teeth, unless some means are resorted to

for the purpose of destroying the harshness occasioned by the adhesive nature of pure gold.

The principle, then, on which to explain the adhesiveness of gold foil is, if the above conclusions be correct, one which underlies all chemical aggregation, namely: *that all pure substances, when brought into actual contact, will cohere.*



For the Dental News Letter.

AMALGAM.

MESSRS. EDITORS:—I promised to report to you any change in my practice in the use of amalgam for filling teeth, founded upon further experience. In all that I have ever said or written upon amalgam, I have been very careful not to advocate its use except in those cases which could not be filled with gold, and where extraction was the only alternative.

I find my name has been used as authority for its indiscriminate and unlimited use, which I certainly never intended or supposed could happen.

I wish now to say to the profession, that I have entirely abandoned it, and shall never use it again in my practice. I have come to this resolution for reasons which I will now state.

In many of the cases where I most relied upon it, and expected to have the best results, it has entirely failed; as in the buccal cavities in molars, when they extended beneath the free margin of the gum, I found that while in some mouths the material remained white and clean, in others it became very black in a few days, and in almost all cases, upon removing the filling, the under side was blackened, and the same color given to the tooth. Again, in the infirm teeth for which it seemed the only thing, and for which it was best adapted by its plastic nature, many of them have had to be removed, owing to supuration of the gums, caused by the tight closing of the previous vent for the escape of pus.

Therefore, I have come to this broad conclusion, that a tooth so infirm as to need a soft filling, would be best removed, for the health of the mouth and the health of the patient; and that my practice hereafter will be to advise their removal, and then leave the responsibility with the patient.

ELISHA TOWNSEND,

No. 1606 Locust Street.

For the Dental News Letter.

HARD RUBBER BASE.

BY SAMUEL MALLETT.

MESSRS. EDITORS:—With the exception of a single communication to the American Journal, giving the result of my experiments in the use of Hard Rubber for plates for dental substitutes, I have contented myself with its use in my own practice, choosing to wait until *time*, the great crucible of nature, had proved by actual experience and demonstration, its qualities for becoming a useful servant of the dentist. I have not wished to put my professional brethren to the trouble and expense of adopting a new improvement, merely because I have taken the lead in its development; they have so frequently heard the call, "Lo, here! and lo, there!" that the time has come when all new things should be thoroughly proved, before they are offered for universal adoption.

Having frequently received, since the first announcement of the improvement, letters from my professional brethren and others, regarding the character of the work in various particulars, I have thought it might be of use to state, through the medium of your valuable News Letter, that which may meet the inquiries of various individuals, who are already interested, or may become so, and contemplate adopting it in their practice. And as some may think I have an "axe to grind," I will say here that I have no more *personal* interest in this matter, than any dentist may have who is using it in his private practice. My labor and expense in developing it, I cheerfully give to the profession. It makes no difference to me whether any dentist in the country adopts it or not; but it does make a difference with the public, who are so afflicted as to be under the necessity of resorting to the use of artificial teeth.

The value of the improvement—the value of hard rubber in constructing dental substitutes—I consider now to be settled beyond a question. Although the work has been slowly and cautiously adopted by the profession, and but comparatively few are making use of it, the time will soon come when its merits will be fully known and appreciated.

The universal testimony of those who wear rubber plates, having previously used metal ones, is, that they are much more comfortable and congenial to the mouth than the metal, and *this fact*, other things being equal, must be a ruling consideration in an artificial denture. The manner of forming and packing the moulds was before described. A considerable skill and experience is required to fill the moulds with

the prepared rubber, so as to secure success; if the rubber is not packed sufficiently dense, the moulds will not be well filled after vulcanizing; if packed *too* full there will be too great an overflow of the rubber, and a bursting of the mould if it is not very closely confined. From four to five hours are now required to vulcanize a case, or cases, for several may be done at once, as well as one, the number depending entirely upon the size and capacity of the heater. If the case is not in the heater a sufficient length of time, or if the heat has not been raised to, or continued at a sufficient degree, it will come out semi-hard, as it is called, and will prove tender and unfit for use; on the contrary, if it is steamed too much, it will be brittle and of too dark a color. The heat should be raised gradually to about one hundred and seventy degrees, Fahrenheit, and be continued about one and a half hours. It should then be raised to one hundred and eighty degrees, and remain about one hour; at one hundred and ninety degrees, one hour, and from three hundred to three hundred and ten degrees, from one to one and a half hours. The heat is ascertained by a thermometer, which has its bulb inserted in the top of the heater.

Wax plates will be found most convenient for fitting this work in the mouth; the plates should be twice as thick as a gold one, for the purpose of polishing on the lingual side. To prepare the wax in sheets for use, it is rolled with a rolling pin; when it is warm, it may be rolled between two sheets of cotton cloth, or otherwise. If the plate becomes warped in fitting it can be immediately corrected by placing it on the model, or if it has become unequal by pressure, a new one can easily be made.

With this work we are sure of a fit, if the impression be correct, the rubber being steamed to the original model taken from the impression; as the vulcanizing of rubber answers to the fusion of metals, it is the same as if it were cast; every line and irregularity of the model being strongly marked in the plate.

Central cavities should be dispensed with in rubber plates, or if at all used, they should be very small and shallow. There is a fortunate affinity in hard rubber for the mouth, which will enable every practitioner to dispense with this necessary evil, which is found in the use of metal plates.

If the plate is at all approximating to a fair fit, it will hold well after it has been worn a short time, even if it is so imperfect at first, as to be retained in its place only by the aid of the tongue and cheek. The last case which I made having no cavity, required quite an effort with the thumb and fingers to remove it.

Single gum teeth, sections or blocks may be used; those of the former designed for cheoplasty are well adapted to it. I have made use of continuous gums; this may be done by first forming the gum and teeth, and allowing the platina to project about the width of a line all around the edge of the gum for the rubber to close over and hold firmly. This makes beautiful work, but has no advantage over other teeth, as the case will be without seam or joints, whether single or other teeth are used.

The continuous gums require so much platina, that the case becomes heavy and more likely to break by dropping, and then I have feared that the slight elasticity of the rubber would cause the gum to crack, and finally give way, and thus destroy the case.

Rubber plates are very light, so much so, that a case will not sink in water, and *this* feature, it must be conceded is of great value; first, because it enables us to extend the plate and thicken in any manner we choose, for the purpose of restoring the face, without perceptibly increasing the weight of the set. I know of no kind of work which possesses the qualities of accomplishing this object as well as rubber.

Again, this feature of it will be appreciated when we consider the fact, that most accidents occur with teeth out of the mouth, such as dropping, or pressing them against some hard substance. Heavy cases are often broken by falling only two or three inches; rubber cases may be dropped one hundred times on the floor without breaking; it may be thrown across the room with but little danger of injury. With this fact, together with my experience with it in other particulars, I am not at all certain but that rubber plates will prove to be far more *durable* than any other known to the profession. I have not as yet had the first case to repair. If it should be necessary to replace broken teeth, it would be best to make a new plate. The rubber around the fractured tooth *could* be cut out, and the tooth removed, and another tooth fitted in its place, and rubber again steamed around it; but I do not consider that the case will be in as good a condition as it was before the injury; it seems to destroy too much of the life of the rubber to steam it over. The rubber apparently undergoes some chemical change in the act of vulcanization; for this reason, if a failure is made, and it is found that the case is not sufficiently hard and tough, or has not flowed in every part where it was designed that it should flow, it is better to begin anew, rather than to place it in the heater and run it through again.

A few objections have been made to rubber plates, some of them professional and others by non-professional persons; but *all* of them, I think I may say, from men who have not had much, if any actual

experience with it themselves. A dentist of high standing averred to me in New York, that he had seen cases that had absorbed the saliva of the mouth, and were considerably disintegrated. I was bound to believe the gentleman, but it must have been caused by the use of poor rubber, or by some imperfection in the manipulation. The plate might have been only semi-hard; I have never seen anything of the kind in my practice. I have an upper set now before me which has been worn as a temporary for one year, but not the slightest change or appearance of absorption having taken place is perceptible, the plate, by the action of the tongue, only having improved in its polish. The same person said that the plates heated the mouth, the same as a rubber shoe would the foot, by preventing the escape of perspiration. I can only say that nothing like this has ever come under my observation, and I do not think that *hard* rubber can produce this result; the trouble was more likely to have been caused by too large a cavity in the plate, in connection with the natural affinity of the material, causing too much atmospheric pressure. It has been said that block teeth sometimes *break* in steaming. I have only to say to this objection, that I have never known it to occur.

There is not the least taste to the article, which can be easily proved by retaining a piece of it in the mouth for a short time. The sulphuric odor of a case which has not been worn, is entirely destroyed by the saliva. From observation, and the testimony of those who wear them, rubber plates have more of an appearance of cleanliness, and are actually more wholesome than others.

There is but one qualification to be made regarding what I have said about rubber plates, viz: for under sets, when the alveolar process is greatly absorbed, and the muscles are inserted at the very top of the ridge, it may be necessary to use work of greater weight.

The advantages of rubber base, as is seen, are mostly in favor of the patient, and yet I think the dentist will find it more agreeable to insert rubber plates than any other, especially swaged plates. There will be a saving of expense, and also of labor. A rubber plate will not cost any more than a silver one; and further, what is for the interest of the patient, will sooner or later be found to be for the interest of the dentist.

It is not probable that all practitioners of dentistry will run into the use of rubber plates at once; an apparatus will be needed that will cost something; a considerable experience and skill will be required to properly prepare the work, to attend to the boiler and heater; and the whole process must be carried through with carefulness and exactness, or a failure may be expected.

For the Dental News Letter.

OSSIFICATION OF THE DENTAL PULP.

MESSRS. EDITORS:—Thinking that the following case of ossification of the dental pulp might be interesting, I herein send you an account of it.

Some time last spring, Mr R., a gentleman of about twenty-four years of age, applied to me for relief from severe pain in a first inferior molar, on the left side. I examined the tooth carefully and found it decayed to the pulp cavity. There were no signs of inflammation, and the color of the tooth was natural. The pain did not seem to be continuous, but intermittent; the paroxysms occurring three or four times in the course of twenty-four hours. The pain at these times, however, was so great, that the patient preferred the loss of the tooth. To my great surprise, such was the brittleness of the tooth that the forceps were scarcely adjusted when the crown broke off, bringing with it the pulp of both fangs in a perfect state of ossification, complete to the very points, and moveable in the crown cavity. The pulp seemed about as hard as cementum, but did not look like it; it was of rather a pale yellowish pink color, and semi-transparent.

The tooth was the most brittle one I have ever seen, and it was with great difficulty that the roots were extracted. I regret that the tooth was lost, or I would send it to you.

Yours respectfully,

JNO. F. KNIGHT.

[We have on several occasions referred to the ossification of the dental pulp, and we doubt not that pain is frequently experienced by the patient during the process of ossification; and the above case, reported by Dr. Knight, is a very interesting one, especially as it was connected with a brittleness of the dentine of the tooth. We intended in the present number of the News Letter, to refer to the fragile condition of the teeth of some patients; or, as sometimes is the case, one or two in the mouth, when the rest are normal. A few days since we extracted a number of teeth for a patient, and found them in that condition, they were so brittle that they would not bear the pressure of our instrument sufficiently firm to make an effort at extraction.

We had intended to examine into this question by various tests, but time would not permit. When this first occurred in our practice, we supposed the breaking of the teeth was due to our own carelessness and badly adapted instruments; but time has satisfied us that that was not the case. It very often happens that teeth are broken in attempting to extract them, and the dentist is censured undeservedly.

J. D. W.]

For the Dental News Letter.

QUARTZ FOR FILLING TEETH.

EDITORS DENTAL NEWS LETTER:—Application has been made to me, by a number of my professional acquaintances, to furnish them information of my success in *dissolving and re-crystalizing* quartz for filling teeth.

These applications, and a hope of being useful to my professional brethren, has induced me to state through your Journal my success, after a long series of experiments, labor and expense, the discovery of a material for filling, that will not only resemble the tooth and resist the chemical action of the fluids of the mouth, but a preparation that can be inserted into the cavity of a tooth with the same facility and ease as "*Amalgam.*" This also can be used in uniting single *gum teeth into one block*, and any shade given *that may be* desired, and be made fire proof.

Not until quite recently have I began to be satisfied in my experiments. I am now happy to say, ere long I will present to the profession that which has been so long desired.

Being an entire stranger to patents, I fully agree with the late Dr. C. C. Allen, when he said he was opposed in toto to patents in dental surgery, or keeping secrets from the profession. Besides, the impossibility of keeping others in ignorance of any particular mode of operating, while patients are constantly changing from one dentist to another, the attempt shows a selfishness which is anything but commendable in any one who calls himself a professional man.

All who are not too conceited to learn, are ever ready to obtain new ideas from others, and often the very inventions and improvements claimed by themselves, and perhaps patented or *kept as sublime secrets*, have been obtained from those who had too much *true* professional feeling to hide their own *knowledge under a bushel*. "Freely ye have received, freely give," should be the motto of all who have the true interests of the dental profession at heart. While we are opposed to all professional secrets, we should ever be ready and anxious to give all credit for improvements or skill in operations, to the persons who are entitled to them. I am firmly of the opinion that all who happen to make any advance in the profession, should immediately communicate it to the Dental Journals now published; that the reputation which would follow would increase his business; that the pecuniary receipts would be greater than could be obtained through the *selfishness* of *patents*. More anon.

Yours truly,

G. H. PERINE,

No. 55 E. Nineteenth St., N. Y.

New York, March, 1858.

For the Dental News Letter.

ANÆSTHETIC AGENTS.—A SAFE SUBSTITUTE FOR THEM.

Having been somewhat timid in regard to the administration of ether and chloroform, I was desirous to find a safe substitute for them. In the spring of 1855, a young man, standing about seven feet in his boots, one whose appearance would convince you that he was not easily frightened at trifles, presented himself to be relieved of the teeth and stumps of his superior, and also some roots of his inferior maxillary. The operation was scarcely begun, when we both discovered that it was no easy job. He got pale and sick and talked about "backing out." The case promising to be a profitable one, it was very desirable to retain it. I proposed to give him something to allay his nervous excitability, and to stimulate him. The first thing I hit upon was the essence of cloves; I administered about twenty drops and proceeded; found the patient much improved; repeated the dose. Matters proceeded smoothly; repeated it another time; he having now taken sixty drops. He talked like a drunken man, and the operation, though an exceedingly difficult one, was finished without much ceremony. On another occasion I administered thirty drops to a young lady, lanced the gums of her four superior incisors, washed the blood from the lancet and my fingers, and, on turning around, found her head in the same position I left it; I got the forceps quickly, and extracted the four teeth without stopping. On the removal of the last, the blood flowed so profusely that it was with difficulty kept from her clothes; when she was told to spit, she commenced laughing, and wanted to know why her head was fastened while the operation was performed. On being informed that it was not fastened, she seemed rather inclined to doubt it.

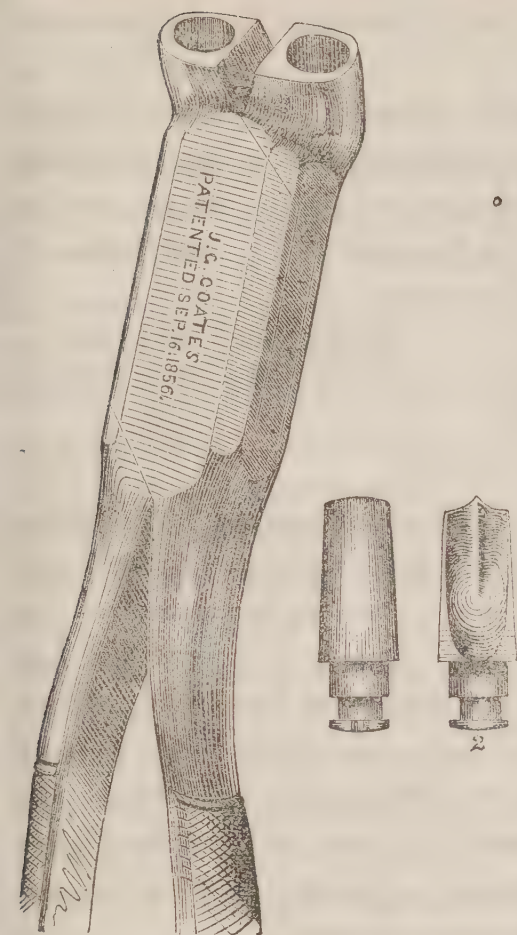
P——, a member of Congress, wishing the removal of several "growlers," his gums were so highly inflamed, that it seemed he could scarcely bear to have them touched. Before commencing he went to get some brandy; on returning, thought he had not enough to see him through "so horrid an operation," took ten drops of the essence. When the stumps were out he pointed to the side of the office, asking whether we saw that fellow run, "How he tears it off." On some persons it appears to have little or no effect. Lately I added to it essence of nutmeg; have not since had much occasion to test the two combined. A few weeks ago a lady took one hundred and fifty drops of the two combined and some brandy, without any apparent effect. This article is cheap, compared with brandy, and is entirely safe. I use less of the oils in preparing the essence than is usually employed.

Bellefonte, Pa.

J. D. WINGATE.

For the Dental News Letter.

DR. J. G. COATES' PATENT FORCEPS.



We do not often speak in a commendatory manner of patents of any kind, but where they are entirely confined to mechanical appliances for the alleviation of pain, we can do so most cheerfully. We have used Dr. Coates' patent forceps, and approve of them very much. The improvement of the *self-adapting beaks* is a very important matter, as there is no pain induced in grasping the tooth firmly, until the effort of extracting is commenced. The same class of teeth vary so much in shape, that it is impossible to construct the beaks of a forceps to properly fit many cases without this improvement. One of these forceps will answer for different classes of teeth by only having beaks of different

sizes or shapes, and also by removing the beaks, right and left instruments are produced at pleasure, and thus very much lessening the incumbrance of *iron* in a dentist's case; besides, a greater variety of cases can be met, with a very few instruments, and a very little expense. There is also another very important feature in the construction of the beaks of these forceps, they are so formed that they will slip down to the neck of a tooth under the gum, without producing pain, and, in some cases, even to the bifurcation of the roots, by merely pressing the handles together, or in grasping the tooth. They are also so constructed that they embrace a greater surface of the tooth than forceps made in the usual way, and consequently there is less liability of cutting the tooth off when it is necessary to hold on firmly in a case where a tooth is firmly imbedded. We regard them as the best forceps extant.

J. D. WHITE.

[The above illustration gives a very good idea of the instruments. In each socket there is a small projecting pin, which fits in the circular depression or groove of the beak, and which keeps it from falling out, but does not prevent the rotary motion, which is one

important feature of the instrument, and by which the beaks accommodate themselves to the peculiar form of the tooth.

The two beaks represented can be shifted from left to right, and others substituted at pleasure.

This cut represents an instrument for the upper molars only, which includes two sets of beaks. There is another handle for the lower, with which three sets of beaks are supplied—one set for the molars, one for the wisdom teeth, and the other for the bicuspid, above and below.

For the Dental News Letter.

CARIES ARRESTED BY CONSOLIDATION OF THE DENTINAL TUBULI.

BY J. H. M'QUILLEN.

The subject to which I would invite the favorable consideration of the reader, is that peculiar phenomenon which is not unfrequently presented in teeth that have been affected by decay, where, by an effort of the economy, the caries, after progressing to a greater or less extent, has been effectually arrested, without any attention at the hands of the dentist. Practitioners of experience and observation, can, without question, recall numerous cases that have come under their immediate notice, in which this condition has lasted for years, without the slightest re-development of decay; the dentine appearing to be as impervious to the action of decomposing agents as enamel.

It becomes an interesting subject of investigation, not merely speculative, but practical in its bearings, to ascertain the characteristics of the change that takes place in the tissue under the circumstances, and also to inquire how this altered condition is effected.

On examining teeth in which this phenomenon is manifested, the dentine denuded of the enamel, is found to present a highly polished, vitrious and darkened appearance; the discoloration, in some cases, being of a light yellow, in others, of a dark brown, and, occasionally, as black as ebony. In comparison with ordinary dentine, its density is *very much* increased, and is frequently found to be as difficult to cut with the excavator, as enamel. The caries is sometimes arrested after making but a limited progress; in other cases, large portions of the teeth are frequently lost before the decay is checked.

The most frequent seat of this mutation is in the molars and bicuspid, upon their buccal, lingual or palatine, and masticating surfaces. The labial surfaces of the canines come next in frequency, and the approximal surfaces of the incisors occasionally present evidences of this change, but it is a rare occurrence. Cases have come under my notice where all of the teeth have been lost with the exception of

the lower incisors and canines, these having been saved by this process alone.

On making a longitudinal section of a tooth in which this change had taken place, I found the discoloration presented on the external surface continued through the structure to what, under the microscope, proved to be a growth of "osteo dentine," and that it was confined to that portion of the tissue whose tubuli had opened upon the surface affected by decay. The remaining portion which had been protected by enamel, retained the normal color of dentine, but was rather more translucent than ordinary. In the field of the microscope, even with a low power, in the discolored part, the tubuli were found consolidated by a deposit within their parieties, extending from the peripheral surface, that had been in contact with the caries, to the growth of osteo dentine. Some of the tubuli were more thoroughly obliterated than others. The efficiency of all, however, as circulating channels, was completely gone, for on adding fluids to the section, they did not permeate the tissue as in preparations of normal teeth, where the fluid can be seen entering and moving along the tubes under the microscope. Though this peculiar change has long been observed, to Mr. Tomes belongs the credit of being the first to notice the alteration of structure revealed by the microscope.

From the increased density of the tissue, proved by the contact of the excavator, and the obliteration of the tubuli, it may with justice be inferred, that an excess of inorganic matter had been deposited. The main constituents being no doubt the phosphates and carbonates of lime. In addition, it appears to me that *possibly* there may be a certain amount of fluoride of calcium also present, giving to the tissue its flint-like or vitreous character. There can be little question that the extraordinary hardness and polish of enamel is, in a great measure, due to the presence of this substance. The extreme hardness and density of fossil bones and teeth cannot but arrest the attention of the most careless observer. Now, according to the investigations of Liebig, Von Bibra, Lassaigne, Lehmann, and others, more fluoride of calcium was found in them than those of the present time. Lassaigne found as much as 15% in the teeth of an *Anoplotherium*, and Lehmann found 16% in the outer portion of one of the ribs of the *Hydrarchos*.* Though regarding these instances as strong corroborative evidence, giving more than an air of plausibility to the supposition, I know that it is only by a chemical analysis of the tissue under consideration, that the presence or absence of this salt can be satisfactorily

* Lehmann's Physiological Chemistry, vol. i. p. 383.

demonstrated. Without that, reasoning on the subject, even from the strongest analogies, is altogether hypothetical.

The consolidation of the tubular tissue of dentine has an analogue in the peculiar reparative process that frequently takes place in rachetic bones, to which the term eburneation has been applied. In this condition, so large a proportion of inorganic matter is deposited in the tissue, as to give it a hardness and weight beyond that of normal bone. Rokitansky remarks, "the induration (eburneation) in which a high degree of rickets terminates, is distinguished by the hardness of the bone, by its glass-like brittleness, and the laminated appearance or leaf-like splitting of its fractured surface. When minutely examined, the Haversian canals are found small, and surrounded by large and widely extending systems of lamellae, but by few bony corpuscles; those which do exist, are small, and, which is remarkable, for the most part transparent, and they have but few canaliculi.*

In both these cases, though the change is the result of vital action, *pari passu*, with the induration of the tissues, they become lowered in the scale of vitality, and the bones are rendered very brittle, particularly if the rarefaction and expansion has been extensive. Though the progress of diseased action in the tissue is arrested, the liability to fracture is increased. The change in the dentine is apparently without any drawbacks, and is eminently a reparative process, as in the majority of cases there is a complete arrestation of decay.

The position, that reducing the dentine in the scale of vitality, by the increased deposit of inorganic matter, is calculated to facilitate, rather than retard the progress of decay, is in opposition to the result of actual observation. To those who have observed, year after year, this altered structure, without any apparent change occurring, it establishes one of the things that a theory can never overturn—a fact.

That the consolidation of the tubuli is the result of a vital action set up by the economy to arrest the progress of disease, admits of but little doubt. A certain amount of excitement is induced in the pulp, the function of nutrition becomes exalted beyond the normal standard, and an increased amount of the materials inservient to the nourishment of the tissues being present, by means of the plasma circulating in the tubuli, they are brought in contact with and appropriated by their parieties, until eventually the tubes are almost or entirely obliterated. The excitement continuing, a growth of osteo dentine may take place.

By these tubes being filled up with calcarious matter, the extent of dentinal surface exposed to corrosive agencies is much reduced. As Dr. Buckingham remarked, some time back, when this subject was

* Rokitansky's Pathological Anatomy, vol. iii. p. 143.

under consideration in the Pennsylvania Dental Association, "Where there is but a limited surface exposed to an acid, decomposition progresses slowly; let the surface be extended by indentations, or by openings in the structure, and it proceeds with increased rapidity." In illustration of this position, he imagined two marble cups or basins, one with its interior presenting a smooth and polished surface, the other, on the contrary, perforated by hundreds and thousands of holes. On exposing both to the action of an acid, it may be readily conceived which would be most speedily decomposed.

If reducing the dentine in the scale of organized tissues favors the progress of decay, why is it that the teeth of old persons who have been so fortunate as to retain them, are found so perfect? For the tubuli of such teeth are usually found obliterated or reduced in calibre. Again, why is it that enamel, which is the lowest in the scale of vital tissues, having but 3.50 of organic, to 96.50 of inorganic matter, resists so effectually the influence of corrosive agents?

It is not my wish that the reader should infer, from the views advanced, that I regard dental caries as the result of purely chemical influences; on the contrary, daily observation convinces me that it is in every sense a chemico-vital process.

(To be continued.)

For the Dental News Letter.

IRREGULARITIES OF THE TEETH.

BY J. D. WHITE.

There is a kind of irregularity of the teeth to which we wish to call especial attention, and that has not as yet, to our knowledge, received the attention of the profession; we mean that kind caused by the extraction of a front tooth that may have been broken off by accident, or disfigured, in patients under twenty years of age. The practice was adopted because it occurred while the patient was young, and a filling up of the parts was therefore anticipated; and unfortunately it received the sanction of good practice before the profession became sensible of its final results. Our attention was first drawn to this subject about twenty years ago, in the case of a young girl, a patient of ours, who met with the accident of breaking off a right front incisor so much as to expose the pulp; during our absence from the city, she was taken to a dentist, eminent in the profession, for advice, and he extracted it. In about one year from that time the space nearly closed, but in closing, dragged the three front teeth inside of the lower arch, which disfigured

the mouth so much, and discouraged the patient in giving any attention to the rest of her teeth, that an entire set of artificial ones has long since been substituted. On account of the unfortunate result of this case, we took a cast of every case that came under our observation for some years, in order to test the final results of the practice, so that we might be able to form a correct basis of practice for ourselves, and by exhibiting the casts to patients applying with such accidents, show what would be the *probable* result in their own cases.

The parts change so much by extracting a single tooth, either of the first or second set of teeth, from the young, as well as the adult, that it should be a matter of hesitation before it is resorted to, and there is no better way in forming a correct judgment, than by keeping a record or casts of cases, and watching them through their changes. We are quite sure that statistical knowledge is not sufficiently attended to by the profession. We will give an outline of what our practice is in those cases. As a general rule, when a case presents itself, and the pulp is not exposed, we file the broken surface as smoothly as possible, and in the course of time the adjoining teeth will wear off, and the short one will become, in time, somewhat elongated; so that eventually there will not be much difference in their length. If the pulp be exposed we destroy its vitality, remove it, and plug the root and whatever portion of the body remains, and leave the case until the patient is eighteen or twenty years of age, or until the root and the parts are as matured as possible, and then we extract the root, and supply a tooth on a plate; or, as is generally the case, we saw off the crown and insert a pivot tooth; but in many cases where this course was anticipated, this even is not done. These cases do not always look so badly when the patient grows up, as was expected. We wait, in any case, as long as the patient can forego the defective appearance; because the root will last them longer in adult life. We gain time for the patient by preserving the root by plugging. We have seen a very few of those cases terminate favorably and satisfactory to the patient and friends; but in the majority of them the front teeth finally strike on their cutting edges and wear off, much to their injury; or the teeth do not quite close latterly, and therefore leave an unsightly space; in some such cases we have been obliged to wedge the teeth apart sufficiently to insert a tooth, to make a satisfactory appearance.

The parents of children to whom this accident occurs, are generally so much confused and distressed as not to be good judges of what is best to be done for the final good of the patient. And again, there is another feature in this matter which has not been, doubtless, well con-

sidered ; there is a growing *taste* in our community with regard to the *appearance* of the teeth ; and what may have been good practice in times past is not good practice now. Appearance, even with a little trouble, is not sacrificed to *short-cut practice* ; besides, it is the patient's future want, and not the parent's anxiety that is to be consulted ; the patient is generally too young to exercise an opinion of their own.

It has always been supposed that the *back teeth* fall forward and close the space of a lost front *tooth* ; but this is an error, it is the front teeth falling *back* and approaching each other at the expense of shortening the arch in front, else the upper front teeth in those cases would not fall on or behind the lower arch. We have seen the sad consequences of this error in several cases within a few days. Again, as a general rule, the teeth do not close toward each other *parallel*, but topple together at their cutting edges, and become oblique across the arch, and present an unsightly appearance, and bring the remaining front tooth in the middle of the mouth.

The accompanying cuts present a very interesting case of a gentleman twenty-four years of age. He had the misfortune of breaking off the right front incisor, while young, and the root was extracted by an eminent dentist. The space closed rapidly and seemed to do well ; but, in time, the arch in front shortened, and the upper teeth fell behind the lower teeth. In this case the right canine and lateral incisor close on the top of the inferior teeth, whilst the remaining front teeth, lateral, canine and bicuspid, fall inside the lower teeth, causing the lower front teeth, including the canine, to project considerably, as well as the chin, giving a very crooked or warped appearance to the face that was naturally an agreeable oval.



Fig. 1, represents the upper jaw before the case was treated, and Fig. 2, the case after treatment. The space was opened with a wedge of cork and wood sufficiently to insert an artificial tooth equal to its fellow ; and simultaneously, with an inclined plain, the upper teeth were thrown over the lower. The upper teeth now fall over the

lower, as they did before the broken front tooth was lost, and the lateral projection of the chin is restored. This was increasing the size of the arch in front, and not forcing the molar teeth back.

For the Dental News Letter.

ECONOMY IN TIME.

MESSRS. EDITORS:—I think that the frequent remarks of J. D. W. in reference to economy of time in performing dental operations, are calculated to do a great deal of harm; particularly, coming from the *source they do*. “A hint to the wise is sufficient.”

Yours truly,

F. D. THURMAN.

Atlanta, Ga., Jan. 15th, 1858.

[ECONOMY IN TIME.—From the remarks of our correspondent, this sentence is a dangerous thing when used in connection with our profession; in every other affair of life it is considered of first importance, and we much regret to learn that it is likely to do “a great deal of harm,” when unintentionally so used, “*frequently*,” in our remarks. *Economy* in dental operations we regard as synonymous with *honesty*. It is the dentist’s duty to economize his own time as well as the patients; he ought to economize the teeth, the pain and the money of his patient. It is his duty to study the interests of his patients in every way that in his power lies. If the dentist is honest to his patients he *must economize*. It is not unfrequently remarked by patients that “he is so awfully slow, that I hate to get my teeth fixed.” We once had a tooth plugged by a dentist of twenty years’ practice, and when he had finished, he asked us “how we liked his operating, as he wished us to send him patients?” We told him, “if we had another to plug, and it required so long a time to do it, we would not have it done for twenty dollars; and if we occupied as much time in plugging a tooth, we would not do it for twenty dollars.” Some dentists are never ready when their patient arrives; they have their instruments to fix, a note to write, or business of some other kind to attend to, so as to waste a good deal of time of the patient. But all this detail is of no account; *energy* and *speed* are synonymous in principle, and proportionately as a dentist slackens his gait, he also slackens his energy, and his operations fall below that excellence otherwise attained. A certain amount of pressure or force is requisite in every stroke of the instrument, and a certain number of strokes are necessary to the execution of the operation of plugging a tooth, and the speed with which these results are produced does not imply incompleteness in finish; it amounts only to a difference of time.

J. D. W.]

For the Dental News Letter.

AMERICAN DENTISTS ABROAD.

American Dentistry—a new term generally used by the Scientific World to denote the perfection of the art—abused by foreign pretenders.

BY W. L. TINKER.

I am a constant reader of your valuable journal, with the rest of the profession who are anxious not to be found in the back ground, in regard to the advanced and advancing state of *American Dentistry*. I use the word *American Dentistry* to denote the highest perfection of the art, a distinct term now used by the scientific world abroad, voluntarily conceded to us for our merit of discovery, improvement and scientific attainment.

I regret to see it now too often abused by foreigners claiming to be American Dentists, in foreign countries. Having resided abroad a number of years, I have often met with many of these "genuine American" Dentists. Upon a strict inquiry, I have found some to have resided only six months, others a year, and in one or two cases, two years in the United States. All have studied with our most *eminent* dentists in New York, Philadelphia, Boston or Baltimore. One or two had diplomas; by what means I do not know; all were "Doctors in Dental Surgery," as a matter of course. They seemed to have been apt students who had discovered the royal road to dentistry, leaping, Minerva-like, to full grown D. D. S's., (in their modest opinion, in most cases,) from our Dental Colleges, the doors of which they had never entered, not wasting their precious time or money (if they ever had any,) in these preliminary studies, deemed of the greatest importance. Some had assumed English names. A Pole called himself "Johnson." A Frenchman belonged to the vast family of "Smiths." A Dutchman or Swede belonged to the "Browns." None of them could speak good English. I found a Spaniard, who had worked at mechanical dentistry, in Madrid, with an American Dentist, announcing himself as a "Dentista Americano." I asked him what part of the United States he had seen? what cities he had practiced in? and found, to my surprise, that Habana (Cuba) was the only *American* city he had lived in. He could not even speak two words of English.

Let the dentists in the United States be more careful in taking students, and especially foreigners, and extremely guarded about granting certificates, that the name of an American Dentist may continue to retain that elevated position it has heretofore had, and *American Dentistry* still continue to be held as the true distinction of superiority in the art.

"Have you an 'American Dentist' in this place?" is the first question asked by all enlightened travellers in foreign countries, when they require any operations of the art. The word *American* is always prefixed, as to denote the best; and if there is not any, the answer is, "Well, I'll wait until I get to another place where I may find one;" unless the urgency of the case will not admit of any delay.

It is the greatest evidence of our estimation abroad, and let us still labor to keep that high rank which the world has conceded to us of its own accord, and be extremely cautious that the term *American Dentistry* shall ever be understood as heretofore.

BALTIMORE COLLEGE OF DENTAL SURGERY.

At a meeting of the Graduating Class of the Baltimore College of Dental Surgery, held January 22d, 1858, the following preamble and resolutions were offered and unanimously adopted:

WHEREAS, We, the Graduating Class of the Baltimore College of Dental Surgery, of the Session of 1857-'58, deeming it desirable to have placed within the College edifice some lasting tribute to the memory of our late Professor of Anatomy, Dr. WASHINGTON R. HANDY; and feeling sure that all who have owed some portion of their dental education to his valuable instructions, would be gratified by having the opportunity of contributing to honor his memory; it is, therefore,

Resolved, That we, as a body, take proper measures to collect from all previous graduates of this College now living, as well as from ourselves, a sufficient sum to procure a "half-length" Portrait of Prof. Handy, which shall be presented to the Baltimore College of Dental Surgery; and also,

Resolved, That we appoint Dr. C. B. Harris to correspond with the Graduates of the College to collect funds for the purpose above specified, and also for the purpose of procuring and sending to each contributor a photograph copy of the portrait.

Resolved, That no contribution be received exceeding ten dollars.

Resolved, That Dr. C. A. Harris, President of the College, be requested to engage the Artist and superintend the painting of the Picture.

Resolved, That our proceedings in this matter be published in the Dental Journals.

James G. Russell, M. D., Maine; J. Smith Dodge, Jr., M. D., New York; Henry Clarke, Maryland; Juan N. Boza, Cuba; Alphonse L. Cartier, M. D., Switzerland; Samuel H. Beard, Alabama; Thomas O. Hills, Dist. Columbia; Charles W. Cadden, M. D., Maryland; Vines E. Turner, North Carolina; Luis M. Diaz, Cuba; Fernando Z. Bazan, Cuba; George P. Woodbury, Mass.; Thornton W. Tomlinson, Virginia; Cornelius S. Hurlbut, Mass.; Carver W. Brown, Virginia; Edward D. Hamner, Virginia; Nimrod W. Long, Alabama; Armand F. Bignon, M. D., Georgia; Middleton T. Henkel, M. D., South Carolina; Nathaniel H. Gibbes, M. D., South Carolina.

C. B. HARRIS, *Correspondent*.

For the Dental News Letter.

WESTERN DENTAL SOCIETY.

EDITORS DENTAL NEWS LETTER:—*Gents.*:—I herewith transmit to you a copy of the order of discussions for the next meeting of the *Western Dental Society*—please give an insertion in April number.

Respectfully yours, G. H. PERINE.

The undersigned, a committee appointed in May last to prepare and announce the subjects, and order of discussions, at the next meeting, to commence on the 22d of July next, at Quincy, Illinois, respectfully submit that the discussions come under the head of "Miscellaneous Business," and in the following order:

1. Difficult dentition.
2. Cause and treatment of the irregularity of the teeth.
3. Best method of treating dentine when the pulp is exposed, or destroyed by natural causes.
4. Filling teeth.
5. Best manner of inserting partial sets with clasps.
6. Relative merits and demerits of the various modes of constructing artificial dentures.

We respectfully urge upon members and visitors having reports of cases, casts, cuts, diagrams, or specimens of operations or work, together with new instruments, tools, fixtures or designs, intended to promote the interest, or facilitate the practice of our profession, to present them for inspection before the Society.

Come, gentlemen, let each bring something for the good of the whole.

H. E. PEEBLES, }
G. H. PERINE, } *Committee.*
A. BLAKE, }

New York, February 28th, 1858.

For the Dental News Letter.

MEETING OF ALUMNI OF THE PENNSYLVANIA COLLEGE.

A meeting of the Alumni of the Pennsylvania College of Dental Surgery was held in the college building, February 27th, 1858, at five, P. M. Dr. T. W. Walker was called to the chair, and J. Greeley Ellison appointed Secretary.

The committee appointed at the meeting of last year to prepare a Constitution, not being present, and presenting no report, it was resolved to appoint a new committee for that purpose, whereupon, Charles Woodnutt, John A. Rowan and J. Greeley Ellison were appointed.

On motion, it was *Resolved*, That when we adjourn it be to meet at the office of Dr. Walker, at 7½ o'clock, on the evening of the first Tuesday in May next, (May 4th.)

The Secretary was directed to notify those concerned of the time and place of meeting. Adjourned.

J. GREELEY ELLISON, *Secretary.*

THE DENTAL NEWS LETTER.

APRIL, 1858.

OUR PROFESSION.

We see by the Dental Journals, and other publications, that there is a general revival going on in our profession. Societies are forming, and Conventions are being held throughout our entire country. The American Society dragged its slow length along for many years and finally died a natural death, without doing much good, except to stimulate, perhaps, a general movement of societory formations under more favorable auspices. Still a great deal is yet to be done to make them what should be desired. But it would be looking for too much, if we could not find some fault in the young and general movement. Our colleges, too, have been struggling faithfully to increase the means and facilities of learning, and to elevate the standard of requirement in our profession; but the success does not seem to be commensurate with the exertions made by these institutions. The graduating classes of the schools do not seem to increase with the facility afforded the student, and the length of time that has elapsed since the establishment of the schools. We fancy that one of the hindrances to a greater increase is due to the expense attending the collegiate course. It costs the student as much money to acquire a dental as a medical education, and on this account many prefer the latter to the former; and when a medical degree is attained, a short period of private pupilage, or a single course of dental instruction gives the medical graduate the same rank, if not even higher than the dental graduate. The purity of the ranks of the medical profession consists in requiring every one who seeks admission, to work up to a given or acknowledged standard. He cannot be admitted into a medical society or convention, unless he comes up to the measure of that standard. Not so with the dental profession as it now is. The colleges are endeavoring to establish a standard; but the societies and conventions admit as members to their bodies all who have the name of dentist by their own christening, and some are even christened by the profession, as members, in its liberality, who are not dentists in any sense of the word; in this way we can never obtain a *dental profession*. The societies and the conventions ought to favor the interests of the schools, and require of every candidate for membership the same amount of information imparted by the schools; and out of the *heterogeneous* mass of

which they now consist, a *homogeneous* compact would soon be formed. We are not insensible to the fact, that this indiscriminate admission of members results from a larger amount of a generous liberality than deliberate judgment; and to us it is very doubtful whether this *short cut*, to elevate and instruct the incompetent in our profession, will not be the least successful way of accomplishing the task. We are of opinion, that a connected course of instruction, even for a short period of time, by those in our profession who had very limited means of acquiring information when they first adopted our profession, would result more favorable, and be more economical in the end, than *scrap* knowledge, gained by associating with societies and conventions. It would be much better for each college in the country to annually rate a class of three hundred, *all dentists*, who had been in practice, than a convention to rate a thousand at its annual meetings.

We do not mean to find fault; but as our profession is in a *mutable* condition, it would be well to look to the future, rather than to the present. Our noble art must, sooner or later, be moulded into form, and present an embodiment to the world—a finished structure—and, in the language of one who was eminent in our ranks, but now no more—Hullihen: “*The dentist must carry upward the standard of his profession, and plant it upon the broad platform of medical science; he must claim for himself and his profession, the same respect and importance awarded to other branches of the healing art, and that, too, upon the same ground—the ground of thorough scientific education.*”

J. D. W.

American Dental Review.—Edited by A. M. Leslie, D. D. S., St. Louis, Mo.—This is a neat quarterly, of 48 pages, published at the low price of fifty cents per annum.

The first number of this new claimant for professional consideration contains much that is interesting; not the least of which is the report of the discussions of the St. Louis Dental Society. In its reviews it gives evidence of very considerable spirit.

In the introductory, the editor opens a wide field,—which the title of the work as well implies,—and which we hope he may occupy with profit to his readers.

There is no reason why a periodical, with the objects set forth by this, and conducted with ability and industry, should not succeed, and from our knowledge of its projector, we have good reason for anticipating such a result for this. We would therefore commend it to the attention of the profession.

J. R. M'C.

The Annual Commencement of the Pennsylvania College of Dental Surgery, was held on Saturday evening, February 27, 1858, at the Musical Fund Hall, before a large and brilliant audience, when the following gentlemen received the degree of Doctor of Dental Surgery:—J. Greeley Ellison, Pennsylvania; Louis M. Lusson, Cuba; T. Yardley Brown, Pennsylvania; John A. Rowan, Pennsylvania; Oliver Sproul, Pennsylvania; S. Garrison Stiles, New Jersey; Charles Woodnut, New Jersey; F. J. Montalvan, Cuba; Wylie Jacoby, Pennsylvania; John R. Lewis, New York; D. H. Goodwillie, Vermont; Charles R. Butler, Ohio; Julius Garke, Prussia; Jose Rafael Bastida, Cuba; J. D. McKellar, South Carolina.

After which, Professor Hayhurst delivered a very appropriate, and, what is rare, a very audible valedictory. The matriculants for the course numbered *forty-eight*, a very promising class. We append the Demonstrator's reports:

Operative Department.

Ordinary Gold Fillings,.....	545
Ordinary Tin Fillings,.....	287
Treatment and Filling of Nerve Cavities,.....	55
Amalgam Fillings,.....	2
Superficial Caries,.....	6
Extraction of Teeth and Roots,.....	2,223
Removal of Salivary Calculi,.....	23
Pivot Teeth,.....	9
Irregularity Plates,.....	2
Total,.....	3,152

LOUIS JACK, *Demonstrator.*

Mechanical Department.

Entire Sets of Teeth,.....	5
Upper Sets of Teeth,.....	21
Partial Sets of Teeth,.....	59
Total of Teeth Inserted,.....	679

T. W. WALKER, *Demonstrator.*

Baltimore College of Dental Surgery.—The eighteenth annual commencement of this School was held Thursday evening, February 25, 1858. Valedictory address by Prof. Piggot. The following comprises the list of graduates:—Fernando Zayas Bazan, Cuba; Samuel Henry Beard, South Carolina; Armand Francis Bignon, M. D., Georgia; Juan Nepomuceno Boza, Cuba; Carver Willis Brown, Virginia; Charles Wm. Cadden, M. D., Maryland; Alonzo Lucius Carter, M. D., Switzerland; Henry Clarke, Maryland; Luis Magin

Diaz, Cuba; Joseph Smith Dodge, Jr., M. D., New York; Nath. Heyward Gibbes, M. D., South Carolina; Edward Daniel Hamner, Virginia; Middleton Stuart Hanckel, M. D., South Carolina; Thomas Oliver Hills, District of Columbia; Cornelius Searle Hurlbut, Massachusetts; Thornton Wm. Tomlinson, Virginia; Vines Edmund Turner, North Carolina; James Ghoulson Russell, M. D., Missouri; George Porter Woodbury, Massachusetts.

The following is the Demonstrator's report:

Report of Dental Practice.

Teeth Extracted,.....	4,115
Cavities in Teeth Filled,.....	1,721
Cavities in Teeth Filled over exposed Pulp,.....	56
Roots and Pulp Cavities Filled,.....	146
Separations between Teeth,.....	223
Removal of Sal. Cal., No. of Cases,.....	99
Diseased Gums Treated, ".....	79
Irregularity of the Teeth Treated, No. of Cases,.....	140
Tumor of the Gum Removed, ".....	1
Dislocation of the Jaw Reduced, ".....	2
Left Superior Alveolus Excised, ".....	1
" Inferior " " ".....	1
Pivot Teeth,.....	3
<hr/>	
Artificial Teeth, full Upper Sets,.....	38
" " Lower Sets,.....	11
Partial Upper Sets,.....	60
Partial Lower Sets,.....	3
<hr/>	
Total No. of Pieces,.....	112
<hr/>	
Total No. of Teeth inserted,.....	902

Fancy Operations.—A friend, (Dr. Harvey, of Maryland,) sends us a couple of samples of teeth, plugged after the manner suggested by Dr. A. J. Volck, published in the "American Journal of Dental Science," for July, and quoted in the "Dental News Letter," for January, 1858, page 118. It consists of setting a piece of enamel in the cavity. Our friend says, "As fancy operations seems to be the order of the day, particularly in regard to filling teeth, I send you two specimens. They are nearly fac-similes of two I patched up some time ago, (three months,) and they are still doing well. Should our friends think well of these, get them to try it and improve on them."

The specimens look well, and evidence considerable ingenuity; but we think, with our correspondent, that such operations had better "be put on the list for further trial."

J. R. M'C.

CORRESPONDENTS.

A correspondent in California, (W. C. K.,) sends us a "Soldering Case," for soldering teeth in. The idea is, a sheet iron frame in which the plate and teeth ready for soldering are imbedded in plaster. The frame being in halves, and connected in front by a hinge, divides the model from front to rear. The design is to provide for the expansion in heating, and thus prevent the plate from warping. This presumes that the alteration of the plate in soldering, is across the palatine arch, at or along the posterior edge of the plate, and there only. A practical friend, (the one through whom he sent it,) thinks, and so do we, that this is an error; that a plate may, and does warp in other directions than the one assumed; and, consequently, as that is its main feature, he is not so hopeful of its utility or usefulness.

A communication from the same correspondent has been received. We would refer him to the report of the proceedings of the American Society of Dental Surgeons, published in the "Dental News Letter" for October, 1851, also to same periodical for July, 1850, where he will find an article "On the Treatment of the Dental Pulp," both of which has a bearing on the subject of his communication. We have sent him a little pamphlet on the subject.

Biography and Memorial of the Late Dr. S. P. Hullihen, of Wheeling, Va., pp. 53.—The decease of Dr. Hullihen has furnished the theme for the above deeply interesting and well-deserved tribute to professional worth, such as his; and the duty has been performed by one of his most devoted friends, than whom there are none more competent.

To the dental profession, the subject of this biography was generally well known, especially in the south and west, all of whom can well remember his energy and indomitable will in any work in which he was interested.

His popularity and professional success (more particularly in minor surgery) was without precedent, so far as we remember, and the respect and affection of the people among whom he lived, is shown by their expressions of sorrow in the various meetings assembled to deplore his loss, and in their determination to erect a suitable monument to his memory. The loss of such a man is indeed a public calamity.

J. R. M'C.

British Journal of Dental Science.—We greatly miss from our exchanges this valuable periodical. We have received none for some months—the cause we cannot surmise. We are not willing to be without it, and must ask the publishers to send it to us, either as an exchange, as heretofore, or by entering us as subscribers—any way, so we get it.—ED.

The Dental Enterprise.—This is a monthly paper published at fifty cents per annum, by Dr. H. Snowden, No. 3 North Liberty Street, Baltimore, Maryland. It is practical in its character, treating chiefly of mechanics and metallurgy. It is well worthy support —ED.

EXTRACTS FROM THE DENTAL PERIODICALS.

BY J. R. M'C.

Quarterly Journal of Dental Science, London, January, 1858.—In this number we find much valuable matter, from which we copy freely.

In the proceedings of the College of Dentists, for October, we have a paper on "Gold Refining and Assaying," by Mr. W. G. Bennett, from which we extract as follows.

After some preliminary remarks on the value of the metal, and the importance of the subject under consideration, he says:

"There are several modes of treatment; but they may be resolved into two classes—the wet and the dry; the former I shall not touch upon, and of the latter, the one I think best, and which I will describe, is that by means of saltpetre and pearlash.

"The first step will be to anneal the limmel;* by which means, all the organic substances, as bone and wood, will be carbonized, and if stirred while red hot, so that all parts may be exposed to the action of the air, most of the carbon will be converted into carbonic acid, which will escape in the form of a gas. An iron ladle, kept for the purpose, will be found as useful as any other form of annealing-pan, and can easily be obtained. When cool, the particles of iron are to be removed by means of a magnet. The heterogeneous mass should then be mixed with saltpetre and pearlash, in quantity varying with the amount of impurity; but a good general proportion will be, one part saltpetre, one of pearlash, and two of limmel. This mixture is to be placed in an earthen pot made for the purpose, and called, on account of its form, a skittle-pot. An ordinary crucible would answer the purpose, but a skittle-pot is to be preferred. The pot should be luted to about half its height, with stourbridge, or some such clay, mixed with a little short hay, stable manure, or tow, and be well dried before being submitted to the action of the fire. All

* This word is derived or corrupted from the French word *limaille*, filings from lime, a file.

being in readiness, two pot-stands should be placed in the furnace, the lower one inverted and resting on the bars, the upper one standing upon the lower; the pot is then placed in the upper stand, which acts as a saucer, and would be likely to save the gold, in case the lower part of the pot breaks. The chief object of the lower stand being to raise the pot so far above the bars, that the body of it may be exposed to the hottest part of the fire. The fire is next to be lighted, and the temperature gradually raised to about the melting-point of gold. It is better at this stage of the proceedings, that not more than three-fourths of the pot be covered by fuel.

“At a red heat, saltpetre, or nitrate of potassa is decomposed, a large quantity of oxygen being liberated, part of which escapes in the form of gas, another portion combines with the oxidizable metals and other substances; these again unite with the pearlash (an impure carbonate of potassa,) and form a compound, which is so limped, at a high temperature, as to permit the minute particles of melted gold to pass through it by their own gravity, and collect in one mass at the bottom.

“If any quantity, say half an ounce of gold, in pieces not larger than a pin's head, be mixed with about ten times their bulk of powdered charcoal, placed in a covered crucible, and kept for about a quarter of an hour, at a higher degree of heat than necessary to melt the gold, when the pot is removed from the fire and cooled, the gold will be found melted in the form of separate grains, showing that heat alone would not be sufficient to collect the gold from the impurities with which it is combined.

“When the boiling, as it is termed, or disengagement of gas, ceases, but not until then, a lid should be placed on the pot, more fuel added, until the whole is covered. The heat may then be raised, as high as an ordinary wind-furnace will permit, and kept at this temperature from thirty minutes to one hour and a half, according to the quality and quantity of the limmel employed. The furnace should then be allowed to cool, the pot removed, and when quite cold, it can be broken. If the operation has been successfully performed, a button of gold will be found at the bottom. This should be remelted with borax, in a blacklead pot, poured into an ingot mould, and will generally be found in a malleable state.

“The bar of metal, or ingot, being obtained, the next step will be to ascertain its quality; and the general plan is to have an assay made of it. For this purpose, about one dwt. is cut from the ingot, enclosed in about half a sheet of note paper, with the words—Parting Assay, together with the name of the person sending it, written on the top; this is then to be forwarded to an assayer, who, when the trial is completed, will fill up the paper, and return it, on payment of the usual fee. In London, if sent before ten in the morning, the papers are generally ready about four the same afternoon, and the fee is eighteen pence.

“As the process of assaying is a very interesting one, I will give a brief account of it, as performed in this country, time not permitting me to go into detail.

“A portion of the sample sent, either eight or twelve grains, is

accurately weighed; two or three times its weight of pure silver is added; the whole is wrapped in pure lead foil, and placed on a small crucible, made of bone ashes, called a cupel; the cupel is placed in a muffle, with openings at the sides, so as to allow the air to pass freely through it. At a red heat the metals melt; the lead is converted into litharge, (an oxide of lead,) which dissolves what are termed the base metals, and is with them absorbed into the substance of the cupel. When cold, the button is weighed; the loss indicates the quantity of base metal. The button of silver and gold is then rolled to about 1-80 of an inch in thickness, boiled in a flask with dilute nitric acid, annealed, and again weighed; the loss this time indicates the quantity of silver; the weight of the fine gold remaining, is the quantity contained in the sample.

“It may be well, if I now say a few words about the information contained on the face of an assay paper, and how to apply it.

“The figures denote the quantities of fine gold, and fine silver, that would be contained in twelve ounces, or a pound troy: the quantity of base metal is found, by adding together the weights of gold and silver, and subtracting this sum from twelve ounces. When the alloy is in a workable condition, the base metal is always assumed to be copper.

“Diagram No. 1.—Copies of two assay papers, the letters F. G. and F. S. signifying Fine Gold, and Fine Silver; the figures in antique characters represent the quantities of copper—

	oz.	dwt.	grs.
F. G.,	7	15	0
F. S.,	2	2	12
	2	2	12

in pound troy.

	oz.	dwt.	grs.
F. G.,	9	5	0
F. S.,	2	5	0
	10	0	

in pound troy.

“The quality of gold, as I dare say you are all aware, is always reckoned by carats, pure gold being taken as the standard; and it is said to be twenty-four carats fine. In any alloy, every twenty-fourth part of pure gold is reckoned as one carat, no matter what may be the nature of the metal it is alloyed with; so a compound of six parts pure gold, with eighteen of other metal, would be six carats fine; eighteen parts gold, to six of alloy, would be eighteen carats.

“To ascertain from an assay paper, the quality of gold, in carats:—Double the ounces of gold for the whole number, adding the 10 dwt., which count as one, place the units of dwt. to the right of the decimal point, convert the grains into decimals of dwt., and place the product to the right of the figure denoting dwt.

“Diagram No. 2.—

oz.	dwt.	grs.
7	15	12
15.55		

oz.	dwt.	grs.
9	5	0
18.5		

oz.	dwt.	grs.
9	0	18
18.075		

“The next question will be, how much of each, gold, silver and copper, is contained in the ingot assayed? The following rules will solve the problem.

“As 12 oz. are to the quantity of fine gold in the assay, so will be the weight of the ingot, to the answer in fine gold, as required. The

same rule will apply to the silver and copper, substituting the weights of those metals for the weight of fine gold.

“Diagram No. 3.—F. G. in A., F. S. in A., and C. in A., represent Fine Gold, Fine Silver, and Copper, in Assay; Wt. of I. represents Weight of Ingot—

$$\begin{array}{l} \text{As } 12 \text{ oz. : F. G. in A. : : Wt. of I. : Ans. F. G.} \\ \quad 12 \text{ oz. : F. S. in A. : : Wt. of I. : — F. S.} \\ \quad 12 \text{ oz. : C. in A. : : Wt. of I. : — C.} \end{array}$$

Or, divide the weight of each metal in assay by twelve, and multiply the product by the weight of the ingot.

“Diagram No. 4.—M. in A. represent weight of gold, silver, or copper in the assay; Wt. of I. stands for Weight of Ingot—

$$\begin{array}{l} \text{M. in A.} \\ \hline \quad \quad \quad \times \text{ Wt. of I.} = \text{Ans.} \\ 12 \end{array}$$

“I must now bring my paper to a close. I have shown how the precious metals may be recovered from one kind of waste; how to ascertain the quality of the product, as compared with a known standard; and lastly, how to determine the quantities of gold, silver, and copper, in alloys, containing alloys of these three metals.

“Anything I have not made clear, I shall be most happy to explain, to any one who may feel sufficiently interested in the subject to make inquiries.”

DISCUSSION.

“The President asked Mr. Bennett what fluxes he was in the habit of using?

“Mr. Bennett.—Pearlash and saltpetre.

“Mr. Mackenzie.—We have listened to an excellent paper from Mr. Bennett, upon refining gold by the dry process, which has both antiquity and use to recommend it. The gold and silver are certainly both obtained in a pure state, but the process is elaborate and expensive. Years ago, I made use of it myself, until I became acquainted with a watchmaker and gilder, who, witnessing my process, said, ‘I require as fine gold as can be obtained, but to get it I do not take so much trouble; I merely melt up all the old material which I buy in the shop—I throw the melted mass into water, from a trifling elevation, put the grains thus procured into a retort containing nitric acid, and boil over a sand bath. All the baser metals are taken up by the acid, whilst the gold at the bottom is left in a pure state, appearing as a dark-colored powder—I then wash with borax or soda, and melt in a crucible.’

“Mr. Perkins.—Would such a process apply to limaille?

“Mr. Mackenzie.—Equally to limaille, if it be coarse enough.

“Mr. Wright.—What should be the quality of the material to allow the acid to act upon it, and how is platina extracted?

“Mr. Mackenzie.—To allow the acid to act freely, the proportion of base metal must not be less than four parts to one part of gold. In the event of any quantity of platina being mixed with the gold filings, they may be dissolved in nitro-muriatic acid. The gold thrown down with sulphate of iron, the platina with an alkali. I

have not, however, found a small quantity do any harm to gold used for dental purposes; on the contrary, it improved by the admixture.

“Mr. Matthews.—Mr. President: I have with much pleasure listened to Mr. Bennett’s paper on refining gold, and the reduction of limaille; but as I consider every dentist may not have the means of applying the dry process, allow me to state the mode I recommend, as being the less elaborate, and the less expensive. Limaille generally consists of gold, silver, iron, lead, tin, zinc, and bone filings. I take the whole, and place them in a large porcelain or wedgewood basin, and pour on them dilute nitric acid, applying a gentle heat. The silver, and the other metals not in combination with the gold, will be dissolved, and the bone dust gelatinized by that process. I filter the solution, and well wash the gold remaining, which will be in the same condition, or quality, as when first used, viz.: twenty-two, eighteen, or sixteen carats fine. To the filtered solution I add chloride of sodium to throw down any silver; to which precipitate, when well washed, I add dilute sulphuric acid, and some small pieces of pure zinc. The nascent hydrogen decomposes the chloride of silver, and leaves it in a metallic state, which may be fused into a button with a little borax or carbonate of potash, or an admixture of both. If this process be carefully performed a grain of gold will not be lost.

“The President.—Would it not be a better plan to carbonize the bone in the first instance?

“Mr. Matthews.—I think it quite unnecessary to do so.

“The President.—Perhaps Dr. Putnam, of New York, whom we have the pleasure of seeing amongst us this evening, will tell us the method adopted in America.

“Dr. Putnam had no idea of addressing the members of the college when he entered the room, indeed, he had come to learn instead of to teach, at the same time, he would willingly state the process adopted on the other side of the Atlantic. The metal to be refined was placed in a crucible and heated to a red heat; when saltpetre was added, and an iron rod immediately stirred about on the top of the gold; the flux acted on by the saltpetre is supposed to work up base metal, but the precious metal is left by itself in a mass; in fifteen minutes it may be removed and rolled into plate.

“The President.—Is it not assayed?

“Dr. Putnam.—No, sir.

“Mr. Mackenzie.—Saltpetre has, in my opinion, a decidedly injurious effect on melted gold.

“Mr. Matthews wished to know how Mr. Bennett managed his ‘sweep.’

“Mr. Bennett.—To enter into such details would occupy a longer time than the meeting could spare.

“Mr. Matthews was glad that an associate had come so readily forward to read a paper, and he trusted the good example would be followed by others.

“Mr. Bennett then replied, that the principal part of the observations made, applied to the wet method, a subject he had purposely

avoided. In reference to the remark of Dr. Putnam, he said it quite confirmed a statement made in the *Dental News Letter*, and copied into the *Quarterly Journal of Dental Science* for October, from which it would appear, that scientific as the Americans are known to be in most matters connected with dentistry, on the subject of refining and alloying gold, they do not appear to be in advance of dentists of this country. Their plan brought to mind the remark of an English dentist, who, when asked what was the alloy he used, said, "a sovereign to a shilling for uppers, and a sovereign to a sixpence for lowers; should the color be too pale, I put in a half-penny when I melt a lot." Of course, if this is the principle upon which alloying is conducted, all the trouble of assaying would be useless, and the necessity for understanding the use of an assay paper would be at an end. One great objection to the use of acids, was the great inconvenience arising from the fumes; when large quantities of materials were employed, arrangements, it is true, might be made, by which this could be got rid of; but excepting for very small quantities, the dry method was the one found best, and the one generally employed; the object being not to obtain fine gold and fine silver, but to get rid of impurities, and collect the gold, silver, and copper, in a malleable form, and then alloy it to the quality required.

The method given by Dr. Putnam, and the subsequent remarks by Mr. Bennett, in justice to the profession in America, require a few words in explanation of the first, and in reply to the second.

In charity to Dr. Putnam, we must suppose he intended to be understood, (but which, unfortunately, he did not make apparent,) that the material so treated was the clippings and filings of 18 carat gold, thoroughly cleansed of iron, etc., and which would need but little, if any, refining, and about the quality of which there could be no question, and the object simply to convert it into plate; for all know that it would of necessity have to be tolerably free from impurities to work into plate after so simple, and where the object be to refine, so futile a process as he gives. The same remarks will apply with almost equal force to the "statement made in the *Dental News Letter*," referred to by Mr. Bennett. It will be readily conceded that individual opinion or process must not be taken as universal practice. Further, we may say, there is no glaring want of information on this subject among the profession here, though there may be carelessness on the part of some in the preparation of their plate from scraps and filings; and to such, this article, with the discussion that follows, will be of service in awakening attention to the importance of knowing the quality, as well as the necessity of using a good article of gold, and for such a purpose we copy it, and would emphasize the remarks of our English friends.

Here is an interesting paper (from which we omit the preliminary remarks) and discussion, on "The Effect of Adulterated Food upon the Teeth, by Mr. Robert Thomson, Camberwell," read before the College of Dentists, at their monthly meeting in November. He says:

* * * "It is unnecessary to enumerate the great number of opinions that have been given and recorded; but I may mention the three prevailing theories now most acknowledged, viz.: "Lateral pressure," "Inflammation," and "Chemical action."

"The decay of the teeth, which is said to consist of a gradual decomposition of the substance of which they are composed, has been variously described; but, as far as I can judge from observation, it begins externally, in the interstices between the teeth, in the hollow parts between the cusps of the crowns, in the indentations at the sides, and along the border of the gums; but seldom on the plain surface of the enamel, or on the roots. This I think indicates that decay originates from the influence of external agents that find a lodgment in these parts. From the most careful observation, and by making many experiments, I am inclined to think that neither lateral pressure nor inflammation would cause the teeth to decay in the absence of chemical action, and this chemical action arises from the artificial state in which we live, (Mr. Thomson here exhibited a tooth, by way of illustration.) Savages, and those people who live in a state of nature, are said to possess better teeth than those of civilized nations, because their systems are not enervated by luxurious living. From this consideration, I wrote in January last to Lieutenant Gordon Cumming, and requested him to give me what information he could on this subject, he having sojourned so long among the wild tribes of South Africa; to which I received the following reply:—

"232 Picadilly, January 10, 1857.

"Sir:—In reply to your inquiry, regarding the dentition of the wild tribes of South Africa, they are much better than ours; in fact, a diseased tooth is hardly ever met with. Those people have no care; no taxes to pay; their stomachs are like the ostrich; they are ever out in the open air; they eat simple food—flesh, corn and milk. I have taken great interest in teeth and bones from my boyhood, and remember once visiting a battle-field in the far interior of South Africa, about a month after it was fought, and carefully examining the skulls, and was astonished at the beauty and regularity of the teeth.

Yours, truly, GORDON CUMMING.

"To Mr. R. THOMSON.

"This is a corroboration of the opinion I had previously formed that the decay of the teeth emanates entirely from chemical action, through the great variety of substances brought into contact with them by what we eat and drink. But I am further of opinion, that this prejudicial influence is heightened by the great extent to which adulterations have been carried; not simply in the luxuries we indulge in, nor the necessities of life, but even in the medicines prepared to relieve sickness and prevent death. It is generally supposed or believed, that the premature decay of the teeth is more prevalent now, than is said to have been the case in former times. May not adulte-

rations in some measure account for this? That such is very probable, I shall attempt to show. We are indebted to the proprietors of the *Lancet*, for establishing an analytical commission, which sat for four years, from 1851 to 1854, inclusive. The result of their labors was published periodically in that journal. This led the Government to institute an inquiry, and a Committee of the House of Commons was formed for that purpose, and all that had been previously published was confirmed. This is what induced me to think that some of these adulterations might have a prejudicial effect upon the teeth, and accordingly I made a series of experiments, some of which I shall presently enumerate. But I propose, first, to make a few extracts from the *Lancet* and other works, commencing with 'Bread.'

"In the manufacture of bread, there are various kinds of flour used, the product of the different sorts of wheat cultivated at home and abroad, and of these varieties there are several modifications.

"In an article in "*Hooper's Medical Dictionary*," it is stated, that the cheap bakers' flour is often made of the worst kinds of damaged foreign wheat, and that, in London, no fewer than six distinct sorts of flour are sold in the market.

"Besides the different qualities, (says the *Lancet*,) there are two distinct kinds of bread made. In the one, yeast, leaven, or ferment is used, and is called leavened, or fermented bread. The other is prepared without leaven, and is called unfermented bread. But substances are used in the manufacture of this kind of bread, the operation of which is, to a certain extent, analogous to yeast. Leavened bread should consist only of flour, yeast and water, with a little salt; such is the composition of genuine home-made bread. The bread of the shops is prepared with inferior kinds of flour, mixed up with great quantities of alum and salt. The substances used in making unfermented bread are, hydrochloric acid, or muriatic acid, with a proportion of carbonate of soda. The following is one of the receipts for making unfermented bread:—flour, 3 lbs.; muriatic acid, 11½ fluid drachms; carbonate of soda, 9 drachms; water, about 25 ounces.

"Observe the large quantity of muriatic acid to three pounds of flour! nearly an ounce and a half. It appears doubtful how far such a preparation can be used constantly with safety to health, or without its exercising a marked influence on the teeth. In the manufacture of bread, alum is used with a two-fold object: first, to render the flour of an inferior quality, white; second, to enable it to retain moisture, by which the loaf is made to weigh heavier. In addition to the great extent to which the bakers adulterate bread, the millers pursue the same nefarious practice with the flour. I have seen several notices in the papers, of millers having been fined for adulterating their flour with alum and other substances still more criminal: therefore, between the two, how unwholesome must much of the bread be before it reaches the consumer. There are other substances sold under the names of baking, egg and custard powders, which are combinations of carbonate of soda, mixed with flour and starch, and colored with chromate of lead.

"I shall now proceed to notice vinegar and its adulterations. Acetic acid is the volatile principle from which vinegar owes its pungency

and aroma. This acid exists ready formed in notable quantities in certain plants, and may be readily generated by fermentation of various vegetable and animal substances. For commercial purposes, vinegar is made from vegetable and spirituous infusions, as the grape, malt, and the sugar-cane. In most cases, when vinegar is manufactured upon a large scale, it is formed entirely at the expense of alcohol. There are four kinds of vinegar met with in commerce: wine vinegar, malt vinegar, sugar vinegar, and wood vinegar. The first three depend upon fermentation, and result from the change of alcohol into acetic acid, while the last is obtained from certain kinds of wood by distillation.

“The principle adulteration of vinegar is dilution with water, and the addition of sulphuric acid, and the use of certain acrid substances as coloring agents. But vinegar will act prejudicially on the teeth, even if not adulterated, and I may therefore classify with it the following observations on an article of every day consumption, viz.: pickles, and their adulterations. In the preparation of this stimulant to the palate, I shall not notice the practice of substituting one kind of vegetable for another, but only the adulteration of the vinegar, and the substances used for heightening the color of the pickles. The following quotations are from popular works, treating on these and similar subjects: ‘Vegetable substances preserved by means of the antiseptic power of vinegar, whose sale frequently depends upon a fine lively green, are often intentionally colored by means of copper.’

“Many vegetable substances are thus impregnated with this metal, and fatal consequences have arisen from partaking of them. One of these publications prescribes, that *greening* should be thus produced: ‘Take a piece of verdigris the size of a hazel-nut, a bit of alum, and a little bay salt, all finely powdered; put into a bottle with half a pint of vinegar; shake it and let it stand till it clears; put a teaspoonful into whatever you wish to color.’ From a publication which has run through eighteen editions, we gather the following: ‘To render pickles green, boil with them half-pence, or let them stand for twenty-four hours in copper or brass pans.’ With such facts as these, we need not be surprised at hearing of fatal results, and Dr. Percival, in the Medical Transactions, vol. iv. page 80, records a case, resulting in death, arising from the inordinate use of these deleterious articles. Of seventeen samples of pickles, purchased at different shops in London, analyzed by the ‘Lancet Commission,’ copper was found in all; in some to a highly dangerous, and in others, to a *poisonous* extent; and in addition to copper, they contained sulphuric acid in large proportions.

“To enumerate all the different adulterations that are likely to produce decomposition of the tooth structure, a substance so readily acted upon by acid, would far exceed the limits of my paper. I shall therefore notice only one other, that is, poisonous colored confectioneries. This is a subject that I conceive to be of very great importance, because at the time they are consumed in the greatest quantities by children is, when the second, or permanent set of teeth are in progress of formation, and this a period when the foundation for a perfect or imperfect set of teeth is laid. I am not aware of this having been considered by any of the writers upon the teeth.

“In Acum’s treatise on adulterations, we find it stated, that with various kinds of confectionery especially those exposed for sale in the streets, for the allurements of children, the grossest abuses are committed. The white comfits, called sugar-plums, are chiefly composed of a mixture of starch and Cornish clay; this is a species of very white pipe clay. The red drops are usually colored with inferior vermilion, or red lead. Mr. Mitchell says, that ‘all cheap lozenges I have examined, contain starch, and nearly all chalk and plaster of Paris.’ He further says, ‘I have now to treat of a far more dangerous adulteration, I allude to the coloring matter used in the manufacture of confectioneries, as red oxide of lead, and other poisonous substances; and it should be remembered too, that the preparation of lead, mercury, copper and arsenic, are what are termed cumulative, that is, they accumulate in the system little by little, till the effects of the poisonous matter become manifested, and which have often resulted in death.’ I may remark, that it is quite unnecessary to use these mineral poisons, as coloring confectionery can be accomplished as perfectly by the acid of vegetable substances, in themselves harmless.

“I shall now enumerate some of the experiments I have made, and remark upon them as I proceed. All acids act upon the teeth, but mineral acids act more readily than those obtained from vegetables. The first experiment I made, was to place a sound tooth in a glass containing nitric acid; the enamel was destroyed in half an hour, and in twenty-four hours there remained only a very small portion of the matter it contained, floating. I tried the same experiment with muriatic acid, and it carried on the work of destruction even quicker than the nitric acid. I next tried sulphuric acid; this and the nitric acid appeared to act at the same rate. I afterwards took a portion of each of these acids, and diluted them to the proportion of six parts water, to one of acid, and in twelve hours the enamel of each was gone, and in twenty-four hours the animal substance alone remained, and this, when taken out of the acid, was very soft and flexible. In this case, too, I found that the dilute nitric acid was a little slower in its action than the others. After these experiments, I pressed the juice from a lemon into a glass, and put a tooth into it; in four days the enamel was destroyed. I then tried the experiment with the juice of a Seville orange, and the result was nearly the same as with the lemon. I afterwards put a sound tooth into some vinegar that had been used for mixed pickles, and this produced quite a contrary effect from any of the others; it shrunk up the root, which became very black, but scarcely affected the enamel; this I attribute to the vinegar being impregnated with the vegetables it had been employed to preserve. I took a few acidulated drops, such as are sold by confectioners, and dissolved them in water in a glass, into which I put a tooth. In three days there was a visible change, but in six days the enamel was destroyed. I made numerous other experiments, and found that acids were certain to destroy teeth in every case, in a greater or less time. I previously mentioned, that in making unfermented bread, eleven and a half fluid drachms of muriatic acid were used, with twenty-two ounces of water, and three pounds of flour; I added a small quantity of muriatic acid to that proportion of water, and placed a tooth in it, and

found, that in twenty-four hours the enamel was nearly all gone. I next took the same proportion of acid and water, and added an appropriate quantity of carbonate of soda, bringing the liquid to the same standard as is used in the manufacture of bread; the result was, that in thirty hours, instead of twenty-four, the tooth had suffered in a like degree. I afterwards took muriatic acid in the proportion of one part acid to ten of carbonate of soda, and mixed it with water; this quantity of soda completely neutralized the acid, so that after some months, the tooth placed in it remained as perfect as when first put there.

“In a popular work on domestic cookery, I found the following—‘The teeth may be generally kept clean by rubbing them with a piece of soft wood, made into a kind of brush, and dipped in distilled vinegar.’ On seeing this, I placed a tooth in distilled vinegar, in a glass; in twenty-four hours the enamel became beautifully white, in forty-eight hours there was no visible difference, at the end of three days there was a very slight deposit of lime at the bottom of the glass, and in five days the enamel could easily be rubbed off. I have seen also in another work of this kind, the recommendation to use dilute sulphuric acid, as a means of cleansing the teeth, and I have met with parties who had actually used such. Some persons use burnt alum, and many of the dentifrices sold at druggists, contain alum and pumice-stone.

“While residing at Norwich, some twenty years ago, I knew of a dentifrice being sold by a druggist, under the name of rose tooth powder, which, on investigation, proved to be composed of nothing but finely pulverized red brick. From these experiments, I ascertain that all acids will injure the teeth, and we know too, that acids of various kinds are used in ordinary cooking, to give seasoning to the dishes in which they are mixed, and also, that acids are employed in the adulteration of food in daily use; the subject, therefore, is one of very serious importance.

“As far as I have proceeded, I have only noticed the deleterious effects of these as *coming into contact* with the teeth; but it yet remains to be considered, what effect acids have upon the system; the teeth being connected with the general organization of the body, may be otherwise influenced than by direct contact. (Hear, hear.)

“From these considerations, there ought to be more attention paid to dietetics, as upon the quality of the substances taken to sustain life, depends the enjoyment of sound health; and from the commencement of their formation the teeth should on this account be studied, as it appears to me the influence of food from without alone causes their decay; and if they decay more prematurely now than is said to have been the case in former ages, this may be accounted for by the injurious effects produced by many of the substances used in the adulteration of simple food, stimulants to the palate, and other luxuries indulged in. (Hear, hear.)

“The President then invited the several members and visitors present to state their opinions on Mr. Thomson’s paper.

“Mr. Perkins said, Mr. Thomson appeared to think that all diseases in the teeth arose from luxurious living, acids, or adulterated food. Now, he (Mr. Perkins) had lately seen a child, only fifteen months

old, who had cut no more than six teeth, namely, four lower incisors, and the two upper central incisors, which last two were very much affected with caries. The child had neither lived luxuriously, nor taken any acid, either in the shape of pickles or any thing else. With regard to the hydrochloric acid used with carbonate of soda in the composition of bread, Mr. Perkins conceived, Mr. Thomson must be under a mistake, to think that bread so made would have any injurious effect on the teeth, as, if the proportions of acid and soda had been correctly given—and he could hardly doubt but that they had—they would neutralize each other, and form a harmless neutral compound, while the mingling of the two together produced the same effect as yeast. Mr. Perkins thought the adulterating community a very bad set of people; and, at the same time, he considered that Mr. Thomson put more on their shoulders, with regard to decay of the teeth, than they had any right to bear; the pickles, for instance, which Mr. Thomson stated to be adulterated with copper, were certainly bad for the stomach, but he was not aware that the small portion of copper used for ‘greening’ them would have any specific effect on the teeth; although the vinegar certainly would, whether genuine or adulterated. Again, with regard to the confectionery adulterated with chalk, and eaten by children, Mr. Perkins could not possibly understand how it could injure the teeth, chalk being rather a good thing for the teeth than otherwise; nor could he comprehend how the *undeveloped teeth*, encased in the jaws, could be injured by confectionery, either genuine or adulterated, acid or alkaline. It appeared to Mr. Perkins impossible that acid taken into the mouth could injure undeveloped teeth with which it never came in contact, any more than it would other protected osseous substances. With regard to the stress Mr. Thomson had laid upon the soundness of the teeth of the ancients, as compared with those of the moderns, Mr. Perkins had no satisfactory data from which to form a judgment; at the same time, he conceived there might be a great error in supposing that human teeth were better formerly than at present; one thing was certain, namely, that much more attention was paid to the state of the teeth at the present time than formerly, and as a natural consequence, bad teeth were now more noticed.

“Mr. Purland held that the comparative soundness of the teeth in ancient and modern times, was a subject fraught with considerable interest. From the various researches he had been able to make, it appeared that the respectable classes amongst the Egyptians had very few decayed teeth; and the same observations applied also to the Hindoos. He considered that one of the causes of decay in the teeth arose from the rotary motion of the jaws, which so frequently took place during the hours of sleep, as by this means the approximating edges became fractured, and rendered thereby the more liable to be acted upon by the acids of the mouth. He would classify tartar as one of the helps to caries in the teeth, and also lateral pressure.

“Mr. Mackenzie could not agree with Mr. Purland in his observations respecting the grinding of the teeth in sleep, as the cause of their decay; he (Mr. Mackenzie) believing that the rotary motion mentioned was more a preservative than otherwise, as the teeth so affected became

polished by attrition, and thus made as it were impervious to decay. He could not coincide with Mr. Purland concerning tartar, as he had found teeth so encrusted quite sound in nearly every case, the substance thus deposited acting as a preservative against the influence of vitiated fluids in the mouth. He considered the cause of caries to be chemical action from without.

“Mr. Matthews said, he could not agree with Mr. Thomson’s remarks, that unfermented bread is injurious to the teeth. When properly prepared, it is suited to such persons as are troubled with dyspepsia. The proportions of acid and soda are so nicely balanced, that injury seems not only improbable but impossible. Hydrochloric acid, well diluted with water, is added to the flour containing a just proportion of soda; decomposition of the acid and soda takes place, chloride of sodium (our common salt) is formed, whilst the hydrogen of the acid is either given off or unites with the oxygen of the soda to form water. Salt is beneficial to the system, preventing putrescence, and unfermented bread can only be injurious when proper proportions of either acid or alkali are neglected.

“Mr. Underwood thought, it should be borne in mind, that dental caries proceeded from constitutional as well as local causes. It was a very noticeable fact, that certain teeth in the members of one family, were often found to be the subjects of caries, whereas, the others were healthy. Diet might certainly exercise an influence upon the teeth; but he considered their decay to be very dependent upon the state of the general health.

“Mr. Mackenzie.—Do you allude to diet as a predisposing or a proximate cause?

“Mr. Underwood.—As a predisposing cause.

“Mr. Matthews would remark, that probably, in many instances, the non-suckling of the infant by the mother, produces delicately-formed teeth. The want of phosphate of lime, as the hardening principle, which is largely contained in human milk, renders the teeth more susceptible of decay. He had observed such to be the case with many of his own patients, and did not know of any artificial food comparable with human milk for the diet of infants.

“Mr. Ghrimes could not agree with Mr. Matthews in his observations relating to the use of artificial food, as amongst the lower orders of the people, many children were brought up by hand, and yet possessed excellent teeth. With regard to the relative durability of the teeth, as exhibited in different nations, he could not attribute to the North American Indians that immunity from loss, accorded by Mr. Purland to the Egyptians and the Hindoos. The skulls of the North American Indians had been found, upon examination, in many instances, wanting in teeth; but he was not prepared to say, that this did not arise from the celebration of some religious ceremony. He would like to know what kind of muriatic acid Mr. Thomson had used in his experiments, because he believed that used in the manufacture of bread was of a different character.

“Mr. Bennett said, that the quantity of acid used in the manufacture of unfermented bread, was regulated by the quantity of soda, so that there should be just enough of the one to counteract the effects of the other.

"After a few remarks from Mr. Perkins, the President called upon Mr. Thomson to reply, when

"Mr. Thompson took up, "seriatim," the objections of the various speakers, endeavoring to prove his own views correct, and pressing upon the serious consideration of the meeting the necessity of a more stringent attention to dietetics, believing, as he did, that what was taken into the system in the common course of ordinary diet, was by no means an insignificant cause of that distressing evil—caries of the teeth."

American Dental Review, for February.—In this number we find an article "On Clasps, by C. W. Spalding, D. D. S.," which presents a new point in mechanical dentistry. After speaking of the injury done by clasps, he says:—

"In the first place, then, the plate should be of liberal dimensions, covering sufficient surface to afford a broad base for the support of the teeth which are to be placed upon it, so that the plate itself shall give all the support possible to the teeth relying upon the clasps to simply retain the plate in *situ*. If the plate is ample, and accurately fitted to the palatal arch, a small amount of force will, in most cases, be found requisite to retain it in position. The writer has for many years been in the habit of employing *narrow* clasps for this purpose, making them of sufficient thickness to give the required strength, and attaching them to the plate by means of standards, so arranged as to induce the removal of accumulations between the clasp and tooth, by the circulation of the saliva.

"The use of one or more standards as a means of attachment, also provides, by a variation of their length, for the grasping of the tooth at any desired point. If the tooth is long, and particularly if it is at the same time bell-crowned, the point selected should be toward the grinding surface, and as far from the gum as is found practicable. If the tooth is short and of such form that it can be successfully clasped at no other point than that near the gum, the plate should be cut away at least one, or one and a half lines from the tooth, and standards introduced for the purpose of promoting circulation, by affording a free passage for the ingress and egress of fluids. These standards should also be *narrow*, no wider than the clasp itself, and should constitute the only point of union between clasp and plate. Half-round wire will be found to be a very convenient article for making clasps. The particular *form* of the clasp is, however, immaterial, if it is both narrow and strong.

"The initial point of decay under clasps is almost always near the margin of the gum, and the object in adopting narrow detached clasps is to leave that portion of the tooth uncovered, and consequently, subject, in a considerable degree, to the same action of the fluids of the mouth, as would take place if no clasps were present.

"It is not claimed, that the above method of clasping will always preserve the teeth from injury, but it is claimed, that much less injury would result from the use of the clasps described, than usually follows the use of the ordinary broad bands.

“An opportunity recently presented itself for examining a case where narrow clasps had been worn some ten or twelve years, and the clasped teeth were found still unaffected by their use, and presented as healthy an appearance as any others in the mouth. The plate worn is of fair size, and supports seven teeth, including the four incisors.

“No mention has here been made of the use of clasps upon the lower teeth, for the reason that their use is believed to be entirely unnecessary, except in cases where *front teeth only* are to be supplied. The remarks on upper sets apply with equal force to this class of cases ”

In this periodical we notice a suggestion by the editor in reference to the mode of entertaining the visiting dentists at the next meeting of the American Dental Convention, which is to be held in Cincinnati, in August, and which reminds us of the suggestion we made in a former number of the *Dental News Letter*, which we desire now to repeat, and more at large than before, viz: That the meeting of the Convention of 1859 or 1860, if the latter be thought best, be held in London, and in connection with the large and flourishing association now in existence there, form a **WORLD'S CONVENTION OF DENTISTS**. (This is presuming, of course, on the concurrence of the British association; but as they have abundant time to speak through their journals, as to their acceptance of the suggestion, we merely throw out the hint.)

There is nothing astonishing in such a project. *See*.—The whole thing, if necessary, may be done in about four weeks' time, without encroaching in the least on the main object of the convention; and those whose time would permit, could extend their trip.

As to expense, it is reasonable to suppose that were a committee duly appointed to confer with the proprietors of the steamship lines, and be prepared to state, that two hundred or more, as the case might be,—a professional body,—were desirous of visiting Europe, that tickets could be obtained for the round trip, with the privilege of returning in any of the company's ships at pleasure, at about one-half the usual rate. This would be no more than many expend in attending the meetings in our own country.

The committee would likewise solicit and receive the names of persons desirous of participating in the excursion, so as to be able to say with some degree of certainty what the number would be. In addition to the members, many friends and acquaintances could be added; also the ladies, and possibly others of the families of some of the members thus swelling the list to quite a large number.

That a large and respectable body might be thus got together, we have no question, and we think so well of it—of its practicability and the pleasure and profit resulting from such a trip—as to urge it upon

the favorable attention of the members at their next meeting in Cincinnati.

Dental Register of the West—Mar. h.—In this number we find an alarming amount of "Proceedings of Societies," including reports from the "New York," "Ohio Dental College," and "Mississippi Valley" associations, making, including reports of committees, some *sixty-five* pages of matter; from which it would seem that the profession is in a fair way of receiving, to a great degree, all the advantages resulting from associated effort. It would be impossible for us to give even a synopsis of the various discussions at all these meetings, and we content ourselves, therefore, with a very few selections.

We publish here, in consequence of not receiving the information in time to place under the appropriate head, the names of the graduates of the "Ohio Dental College," at the last commencement, at which Professor Chapman delivered the valedictory. *Graduates.*—S. L. Bracey, Miss., Wm. A. Ross, C. C. Dills, Chas. W. Robinson, Ohio, and M. W. Wartman, Canada West.

In the Mississippi Valley Association, the election for officers resulted as follows:—President, W. R. Webster; Vice-President, G. W. Keely; Corresponding Secretary, J. Taft; Recording Secretary, G. Watt; Treasurer, C. Bonsall; Executive Committee, J. P. Ulrey, C. W. Woodward, H. A. Smith; Committee on Membership, E. Osmond, A. G. Stipher, J. Richardson; Committee on Dental Progress, J. Taylor, H. A. Smith, J. Taft. Subjects for discussion were, 1st. *What means will be most efficient in securing a healthy denture?* 2d. *What is the most effectual treatment of exposed nerves, and what circumstances modify the treatment?* 3d. *Filling Teeth.* 4th. *What are the indications for the extraction of the deciduous teeth?* 5th. *Irregularity and its treatment.* 6th. *To what extent may the atmospheric principle be applied to partial sets of teeth?* 7th. *What are the merits and demerits of that method of inserting artificial sets of teeth denominated CHEOPLASTY?* All of these were discussed at considerable length, excepting No. 5, which was referred to a standing committee. In the discussion of subject No. 3, we notice that our venerable friend, Dr. Blakesly of Utica, N. Y., was a participant, manifesting all the earnestness and enthusiasm of "a young man, or an old boy."

The following report, which we copy entire, possesses general interest, and will be read with profit, and should be preserved as a matter of history.

*“Report on Dental Progress.—To the Mississippi Valley Association of Dental Surgeons.—GENTLEMEN:—*The undersigned members of your committee on Dental Progress would respectfully report, that they have, as far as practicable, endeavored to present for your consideration such material facts and statements as relate to the subject referred to them.

“In reviewing briefly the various means and instrumentalities more recently concerned in the development of Dental Science, the committee are conscious of the difficulties naturally incident to the attempt to so analyze or separate these various agencies that they may be able discriminately to present those only that clearly seem to indicate *progress*. While much that enters into the aggregate of professional attainments will be readily recognized and taken as undoubted evidence of solid advancement and practical improvement, there are, on the other hand, many elements entering into this common fund, either of questionable utility or positively worthless. That the profession is steadily advancing in usefulness, in honor and in influence is patent to all. The unsatisfied and restless spirit of inquiry, enterprise and invention is gradually appropriating new materials in science and art, unfolding new truths and principles, and striking out new and untried paths in practice.

“Prominent among the evidences of true progress in the profession, is the increasing recognition, on the part of its members, of the paramount value and importance of *associations*, and the general endorsement, either in sentiment or by actual membership, of the aims and policy of the various dental organizations scattered throughout the country, as well as their rapid increase, are substantial proofs of the fact stated.

“The American Convention, so far as the history of its *past* is concerned promises for the future a wider range of influence and usefulness than was ever enjoyed by the parent society from which it sprung. Founded upon a more liberal basis and contemplating objects and purposes more strictly in accordance with the spirit of the age and the increasing wants of the profession, it cannot fail to promote, in the highest degree, a more free and extended interchange of opinion upon all topics of discussion, a greater freedom of social and fraternal intercourse, to become a more effective means of suppressing empyrism by a generous recognition and endorsement of merit or excellence, wherever found in its democracy of talent. The practical encouragement and support already extended to it by a large class of practitioners, heretofore indifferent or opposed to all organizations of the kind, furnishes a gratifying assurance that it will continue to so grow in popular favor as to become practically, and, in fact, what its name imports, a National Convention. Its next meeting will be held in this city, on the first Tuesday in next August, when it is earnestly hoped that its representation of members will be largely augmented.

“The rapid multiplication of State and local societies constitutes another important element of progress. In something more than twelve months, no less than seven dental associations have sprung into a healthful and vigorous existence. We have the “Western Dental Society,” organized in April, 1856; the “North Carolina Dental

Society," in October, 1856; the "St. Louis Dental Society," in December, 1856; the "Pennsylvania Central Society of Dental Surgeons," in May, 1857; "South Jersey Dental Association," July, 1857; the "Dental Convention of Northern Ohio," in November, 1857; and the "New York Dental Society," in December, 1857.

"There are now in the United States, as far as the committee are advised by published reports, ten dental societies, including, with those just mentioned, the "American Dental Convention," the "Pennsylvania Association," and the Mississippi Valley Association."

"The 'Mississippi Valley Association' is the oldest dental society now in existence, having been organized in 1844; the "Pennsylvania Association" following in 1845.

"The committee does not propose to consume time with separate commentaries upon the condition, aims and prospects of these several State and local societies, but will state briefly what is verified by the history of their proceedings, that they are amply encouraged by the more intelligent and appreciative practitioners of the country; that their proceedings are characterized by singular harmony; that they are effective in accomplishing the purposes contemplated in their creation, and are exerting, beyond a peradventure, a salutary and widespread influence in the cause of dental progress.

"Indeed it would be difficult to estimate the benefits accruing from these periodical re-unions, or the extent of their influence upon the interests of the profession. Much may be hoped for in the cordial co-operation of earnest working men, recognizing a common brotherhood and cemented by a community of interests, each impelled by a generous impulse to contribute to the common fund whatever is practicable in theory or valuable in experience. These associations tend largely to the elimination of practical good. They invite comparison of individual methods of practice, and by consequence stimulate to greater excellence in practice; they encourage the free discussion of principles, and thereby develope new truths; they exalt the standard of professional deportment by placing a premium upon professional ethics; they dissipate local jealousies and personal discords, by the harmonizing influence of social contact; they cultivate increased respect for, and toleration of, opinion, and engender a cordial reciprocity of good feeling and good fellowship, and should receive, as doubtless they will, the hearty support and encouragement of every friend of progress in legitimate dentistry.

"The committee has nothing specially to report in relation to dental colleges. While there has not, in any case, perhaps, been any considerable increase in the attendance of students upon the several schools, we deem it sufficient cause of encouragement, that in despite of the disabling causes connected with the late disastrous and protracted financial crisis pervading all parts of the country, they have been able to maintain their ground with but little or no diminution in the number of matriculants. We do not conceive it necessary in this connection to call your attention at any length to the importance of this means of professional advancement or the bearing of these institutions upon the interests of Dental Science. The system of collegiate instruction is too well grounded in the favor and confidence of the

profession, and its claims too generally recognized to require discussion in this place.

"There has been no recent increase in the number of dental periodicals.* The "American Journal of Dental Science," the "Dental News Letter," the "Dental Obturator," and the "Dental Register of the West," comprise the list of American journals now published. These are all conducted with ability, and are well sustained by the profession. Like the arterial ramifications of the body, they are constantly pouring into all parts of the dental organism a rich and swelling tide of life-giving elements for its more perfect growth and development.

"Nothing has been added to the list of elementary works or text books, since the publication of Harris' American edition of Fox.

"The progress made in the operative department of dentistry is probably more difficult to delineate than that of either the *scientific*, *literary*, or *mechanical* departments. Of course these departments cannot be considered as independently of each other; they are intimately connected together, and constitute parts of a harmonious whole.

"Operative dentistry is made up of minute particulars to such an extent, that to the superficial observer they seem scarcely worthy of close attention; in almost everything, and especially here, great things are made up of small things.

"In the remarks on this branch of the subject, we propose nothing more than a reference to some particulars, indicating, as we think, that some advance has been made in this department.

"We think it quite apparent that there is an increasing interest taken in the study of dental anatomy, physiology and pathology. In regard to dental pathology, there has been much difference of opinion, and consequently much hypothetical reasoning. There is, doubtless, considerable progress making with the profession generally, in regard to the pathological conditions of the teeth. This knowledge is very important to the dental practitioner; without it, his best efforts are but strokes in the dark. The treatment of these conditions is vastly different from, and more efficient, than that formerly employed. At one period, almost all dentists filled teeth as though they were inorganic bodies, and no more susceptible of disease than a pebble. While it is true that such men as Koecker, Hayden, Greenwood and Parmly did recognize the pathological conditions of the teeth, and made their operations conform to the indications thus pointed out, the great mass of operators at that time, and indeed long subsequent to it, gave no attention whatever to these things. When a tooth was found with an exposed pulp, the direction was, "*take it out.*" If a case was presented in which the dentine was so sensitive as to forbid an operation, the pulp was pronounced exposed and the tooth extracted or permitted to remain, with the hope that it would decay away as soon as possible. The days of such ignorance, with the mass of the profession, have passed away.

"The first thing that is noticed now with the majority of our opera-

* A new quarterly published at St Louis, called the "American Dental Review," and edited by Dr. A. M. Leslie, has just made its appearance, and is likely, under its present management, to become a useful and popular journal.

tors, is the conditions that exist in any given case, modifying the treatment and operations to the existing indications, seeking to change or modify unfavorable conditions by local or general treatment. All this is preparatory to the operation itself, but it is, in many cases, equally important.

"Your committee are pleased to entertain a reasonable hope that the profession will go on to higher and higher attainments, until, in this particular, there shall be nothing more to do except to properly train those about to enter the ranks of the profession.

"The subject of filling teeth is one of vast interest, not only to the dental profession, but to all who have, or expect to have, decayed teeth; and any thing that will tend, in any respect, to improve this operation should be noted and employed by the profession.

"One point in the operation of filling, to which attention is more closely directed than formerly, is the formation of cavities. Until recently there seemed to be no definite idea in regard to the form of individual cavities. Formerly, upon inquiry of operators generally, as to the forms of individual cavities, the reply was, "Oh, I remove all the decay and have the cavity of such a form as to retain the gold, larger within than at the orifice," a very good form of course, but too general to be of value to any one, and especially to a young practitioner. Now, when inquiry is made of a good operator, one who is posted up in his profession, in regard to his manner of forming cavities, he forthwith specifies a cavity, its location and extent, and then describes minutely, the exact form he would give each wall of the cavity, the particular angles desirable and their location; the best location for retaining points and the best manner of forming them. Thus all parts of the operation is so described that it is perfectly comprehensible.

"The descriptions we got a few years ago of dental operations were somewhat like the man's description of a steam engine: "a boiler, a cylinder, a piston rod, a fire-place, and a fly wheel, so arranged as to give rotary motion to the fly-wheel." Not a very satisfactory description to one who wished to build an engine.

"In regard to the forms and conditions of gold for filling, we think there has been much improvement. There are now principles employed and made available, that but a little while ago were wholly overlooked. The cohesive property of gold was not made available, as a general thing, until within the last two or three years. That is considered by all who have become familiar with its use as a very great and important step in dental practice.

"There are two forms of gold in which this principle is made available, viz: annealed or adhesive foil, and crystal gold. This principle was for a long time rejected, owing to a want of knowledge and skill in its management. Formerly it was necessary to have a cavity larger within than at the orifice, and admissible only to bring the filling flush with the borders of the cavity, and then, unless it was skilfully deposited, it would escape in fragments. Now, with adhesive gold, a plug can be made almost any where in any kind of a cavity—there is no such thing as a cavity in a decayed tooth, which cannot be filled with adhesive gold foil, or crystal gold. Even the crown of a molar

tooth may be formed wholly of gold; when the crown is gone, leaving the root smooth and sound a little outside the margin of the gum.

“Very considerable attention has been given to the forms of plugging instruments, and it is now demonstrated that there is far more in this particular than was conceived of by the operators of but a little while ago. The condensing instruments, containing from two to eight definite, perfectly formed, sharp points, prove to be far superior for condensing gold of any quality to any forms hitherto employed. Formerly, large, blunt points were used; now, perfectly sharp ones, and the results demonstrate their superiority. Owing to the conditions of gold to which we have referred, of which advantage is taken, and the improvement of plugging instruments, a fine finish is far more easily obtained than by the former proceeding. In the mechanical departments of the profession, the progress is evident more in the gradual improvement of old methods, than in new and startling discoveries. While processes that commend themselves to us for their intrinsic excellencies, though, perhaps, not yet fully developed, are growing in favor, the test of time and experience is as certainly consigning other methods to early and merited neglect. The continuous gum work and gutta percha are favorable examples of this fact.

“The improvements in continuous gum work consist chiefly in the more perfect condition of the materials and improved methods of manipulation. The formulas, as originally used, were subject to many essential imperfections, as want of strength, checking, blistering, etc. The materials now used are more refractory, and require a heat approaching nearly to that used in the manufacture of porcelain teeth. If we are correctly informed, borax is entirely dispensed with, which obviates the liability to blistering upon repeated heatings, besides imparting greater strength to the body. Formerly, much reliance was placed upon the strength imparted to the work by substantial linings, but a greater degree of strength is now claimed for the body alone, and backings are only used as a means of support for the teeth while the material is being applied. Heretofore the tedious and difficult operation of soldering rims to the plate was resorted to; now, they are either struck up, or the following plan adopted, which proves more expeditious and convenient:

“Plain plates are swaged, the teeth arranged, slight linings adjusted, and the body or base applied, leaving a margin of uncovered plate around the borders, of the width desired for the rim. The base is then backed and the uncovered marginal portions of the plate carefully turned over with a pair of pliers, and pressed down upon the edge of the porcelain base. The material for the gum enameling is then applied flush with the overturned edge or rim of the plate and fused. If carefully done, the work when finished will present a neat and finished appearance, in all respects equal to any other method of rimming, and is a great saving of time and labor. Much of the work at present done consists in enameling the entire lingual face of the plate. In other cases, a duplicate plate is soldered to the primary one, and made continuous on the inside of the teeth with the gum body. Or the two plates are made of equal dimensions, leaving a space between them equal in width to the air chamber, filling in the space not soldered with body through an opening in the gum plate, corresponding

in size to an ordinary chamber, thus converting Cleaveland's chamber into Gilbert's. These processes all bear the marks of improvement, and render this style of work more desirable.

"That style of constructing artificial dentures entirely from teeth upon porcelain, introduced by Dr. Loomis, we believe has not been used to any considerable extent beyond the limits of northern Ohio. It is generally, so far as the committee is aware, esteemed impracticable, from the difficulty and uncertainty of estimating with sufficient accuracy the amount of shrinkage in the process of baking. Further improvement will doubtless be made, which will increase its claims upon the attention of the profession.

"The same may with propriety be said of Dr. Satterthwaite's style, which is somewhat similar to the one just mentioned, and liable to the same objections.

"In regard to the use of gutta percha as a base for artificial dentures, especially for permanent work, the common sentiment of the profession, based upon sufficient tests of its utility, will relieve the committee from the duty of passing judgment. It has been "weighed in the balance and found wanting." That the material may meet the expectation of its friends in some cases of temporary work is possible, and that it may be moulded into many appliances subservient to the wants of the profession in many particulars, is quite certain. Beyond such purposes, we have no present grounds for belief in its utility.

"Last, though certainly not least, if faith is to be placed in the testimonials of credible witnesses, comes "Cheoplasty." Whether the claims set up for this style of work by the patentee, and those who have adopted it in their practice, are to be fully realized, remains, probably, a question to be determined by time and a more extended experience in its use. These constitute the touchstone by which the qualities of all important inventions in Dentistry have heretofore been tested, and it is not likely that Cheoplasty will escape this ordeal. Some methods have gone down beyond the hope of renovation, while others are acquiring fresh claims to confidence in their practicability and usefulness.

"The committee is in possession of no facts in relation to this style of work, not open to the professional public, and are, therefore, not any more capable of passing upon its merits. We shall give only a brief synopsis of what is claimed for it, viz: that it may be sufficiently attenuated to fit it for practical use without being clumsy or unmanageable in the mouth, and yet possess all the strength and stiffness of an ordinary gold plate. That it is indestructible in the mouth, undergoing no change of color, and unaccompanied by any appreciable metallic taste. That it is superior to metal, and equal to any other style of work in point of cleanliness, the several parts so incorporated as to exclude the lodgment of foreign matters subject to decomposition. Its susceptibility of a perfect and faultless adaptation to the mouth, in all cases where a true impression of the parts has been obtained, the material for the base being cast directly upon the plaster model. Its exemption from contraction in cooling. Its capability of being moulded and formed into any desirable shape. The ease and facility with which the piece may be constructed. Great economy of

time in its construction. The facility with which it may be repaired, when broken or impaired by accident. The reduced cost of the materials employed, compared with other processes.

"As the reasons for or against this style of work will probably be fully elicited during the discussion of one of the questions before the association, we refrain from further comments.

"The committee are unadvised of any marked or specific improvements in the manufacture of porcelain teeth. Indeed, there seems to be but little room for progress left in this particular. Manufacturers are, doubtless, steadily advancing in this department from year to year, in the structure, coloring and translucency of their teeth, as well as modifications in form, to suit the varying exigencies of practice.

"Besides the items of special improvements already mentioned, there are, doubtless, others not enumerated. To do so and describe them, would extend this report beyond reasonable limits. The committee would, therefore, close it, indulging the hope that the profession, taking encouragement from the past, will continue to extend their researches into the yet unexplored fields of science and art, so that from year to year it shall increase in usefulness, honor and influence, and stand as an honored branch of the healing art, more and more perfectly vindicated in the good opinion and respect of the world."

J. RICHARDSON,

J. TAFT,

H. R. SMITH.

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We regret to see announced in this periodical the decease of Dr. R. Somerby, of Louisville, Ky., an exceedingly kind, useful and intelligent gentleman. He died January 26th, 1858, at the age of 67 years. We append the following:

"At a meeting of the dental profession of Louisville, on the 26th of January, 1858, at the residence of Dr. Samuel Griffith, called upon receiving intelligence of the death of Dr. Rufus Somerby, Dr. N. Clute was called to the chair, and Dr. J. A. McClelland appointed secretary.

"The following preamble and resolutions were unanimously adopted:

"It having pleased an all-wise Providence to call from the scene of his earthly labors and the field of his usefulness, our friend and brother, Dr. Rufus Somerby, so widely known and appreciated for his talents, his rare professional skill, and his many admirable qualities of heart. Therefore,

"*Resolved*, That we have received with profound regret, the intelligence of the decease of our late associate.

"*Resolved*, That in the death of Dr. Somerby our profession has lost a bright ornament, dental science a zealous, intelligent advocate, and our city an excellent and useful citizen.

"*Resolved*, That with heartfelt gratitude for the services rendered by Dr. Somerby to the profession of which he was a distinguished member, and to the community in which he lived, we will cherish his memory with affectionate regard.

“*Resolved*, That we tender to the bereaved family of the deceased our warmest sympathy, and that the Secretary be directed to transmit to them a copy of these resolutions, and furnish a copy to each of the dental periodicals, and to the daily papers of the city for publication.”

“LOUISVILLE, Feb., 1858. J. A. McCLELLAND, Secretary.”

“*Chemistry.—Anæsthetic Substances.*—Our readers may recollect that a few months ago amylene was recommended as preferable to ether and chloroform in producing stupefaction or anæsthesia, on the special ground that its employment was unattended with danger to the patient, or nearly so. MM. Foucher and Bonnet have, however, in a recent communication, addressed to the Academy of Sciences, recorded facts leading to quite a contrary result. In twelve experiments performed on rabbits, they have ascertained that the anæsthetic effect of amylene is produced within from three to six minutes after its application. Before stupefaction is produced, the animal utters piercing cries, and throws its head backwards; its breathing is accelerated, the globe of the eye is strongly injected, and moves convulsively, a tracheal hoarseness always accompanying the above symptoms. The period of insensibility does not last long if the application of amylene be not continued; in the contrary case, however, a complete collapse takes place; the animal stretched out, without motion, obeys every impulse of the hand, and resembles a flabby mass in which breathing is hardly perceptible. This state may last twenty minutes without causing death. The blood drawn from the arteries during this period still preserves its usual color. Animals subjected to the action of amylene for a certain length of time, continue, after the operation, in a state of stupor and imbecility, which sometimes lasts seven or eight hours; but in none of the cases observed by the authors of the communication has death followed the application of amylene. The conclusions resulting from their experiments are as follow:—1. Sulphuric ether, chloroform, and amylene are, of all volatile substances experimented on, the only ones that produce anæsthesia. 2. Amylene does not produce stupefaction unless the quantity of air with which it is diluted be very small; but then it acts upon the animal economy, and especially upon the respiratory organs, in a manner which may produce dangerous effects. 3. Chloroform has all the advantages of amylene, *without the evils* which accompany the use of the latter. 4. None of the substances above-mentioned produce anæsthesia, whether local or general, when applied to any peculiar part of the body by injection under the skin.—*Galignani's Messenger.*”—*Quar. Jour. Dent. Science.*

“*Perchloride of Iron.*—Dr. Dowler reported in the *New Orleans Medical and Surgical Journal* for September, a case of a troublesome and alarming hemorrhage, following the extraction of a tooth. After trying various remedies without success, he saturated some lint with the perchloride of iron, and placed it in the socket, when the bleeding ceased.”—*College Journal.*—*Ibid.*

Selections and Abstracts from Medical and other Periodicals.

BY S. S. W.

“*On the Hardening of Steel.*—There are few things of which it is more difficult to understand the *rationale* than hardening steel; or why the same operation, of heating red hot and plunging into a cold fluid, which hardens steel, should soften copper.

“Some persons will explain every thing, whether they understand it or not, and for this also have they found, in their own imaginations, a perfectly satisfactory answer, and cut the difficulty by saying steel is condensed by the operation; but, unfortunately for their theory, the reverse is the fact, and instead of being condensed, it is expanded by hardening, as any one may soon satisfy himself by taking a piece of steel as it leaves the forge or anvil, and fitting it exactly into a gauge, or between two fixed points, and then hardening it; it will then be found that the steel will not now go into the gauge or between the fixed points. Or let him rivet together a piece of steel to a piece of iron, filing the ends of both even, so that they may be exactly the same length, then heat them to a proper heat to harden the steel, and plunge them into water, he will find the expansive force of the steel has nearly torn the rivets out, and that it extends beyond the iron at both ends. Any article may be taken with steel on one surface and iron on the other—such as a joiner’s plane-iron in the forged state—flat on both surfaces, and hardened; and the expansion of the steel will cause that side to be convex, and the iron side concave.

“All steel expands in hardening, but that the most which is most highly converted, and in direct proportion to the amount of carbon it received in that process. No other general rule can be given for the heating of steel for hardening than this—that it should in all cases be heated as regular as possible to the lowest temperature at which that particular kind of steel will harden, and as little as possible beyond it, remembering that the more highly converted the steel is, the lower the temperature at which it will harden; and that a small article, such as a pen-knife blade, will harden at a lower temperature than a more bulky one made of the same steel, because the small article is more suddenly cooled. The hardening of very bulky articles, such as the face of an anvil, cannot be effected in the same way as smaller articles, by plunging them into water; for the length of time required in cooling will be almost certain to leave the middle of the face soft, where it is of the most consequence that it should be hard. Where the anvil forge is worked by water-power, they possess the best means of hardening them, which is this:—The anvil properly heated, should be placed in a water tank, face upwards, under a shuttle connected with the mill-dam; the shuttle drawn, and a heavy and continuous stream of water let fall from a height of ten or twelve feet upon the anvil face, which effectually hardens the surface.

“A red hot anvil plunged into water, would, for a time, be surrounded by an atmosphere of steam, which would prevent its direct contact with the cold water, whereby its cooling would be retarded too much to harden the face; and hence the advantage of a continuous stream of cold water. Hence, also, the necessity of moving about in

the water even articles of a pound or two in weight, to remove them away from the steam as it is generated upon their surfaces, and thus promote more rapid cooling.

"It is a good plan to harden hammer-faces, where there is a tub and water-tap conveniently near, by plunging the red-hot hammer, held with the face upwards, into the water, so that a stream from the tap may fall upon its face. The face of hammers and anvils is ground after being hardened, but should never be tempered."—*Orr's Circle of the Sciences*.—*The Annual of Scientific Discovery*.

"*Hardening Iron and Steel*.—A correspondent of the *London Engineer Journal* gives the following interesting memoranda, the result of his experience on the hardening of iron and steel:—

"Hardening steel is a very peculiar operation, and is one of the greatest contingencies in the manufacture of articles into which it is transformed. Under the most careful management, I have seen very expensive articles in tools and cutlery rendered perfectly useless through the seeming caprice of the two elements, fire and water; if such articles had been rubbed in prussiate of potash, which gives the metal a sort of liquid case, I think cracking in the water, so common an occurrence with superior articles, would be prevented, particularly if the water used were soft, and by the infusion of a little hot water rendered lukewarm. In hardening iron the very opposite course should be pursued; have the water cold as possible, the harder the better; a little quick lime in it would also be an improvement, and if the iron to be hardened be heated nearly to a white heat, rubbed with or rolled with pulverized prussiate of potash, a steel surface is sure to be obtained. The use of prussiate of potash might be a great improvement to the tools used by miners. Their picks and spades would wear longer if hardened with it in the manner I have described. It must be remembered that it is only the surface of the iron which is effected, and the hardening will not penetrate more extensively than the thickness of ordinary tin plates; but the resistance is so superior to that of iron unhardened, that it would be a great saving in the cost of working-tools. There is another advantage: it would not render the iron brittle, consequently there would not be an increase in breakage, which is of considerable importance to the owners of extensive workings.

"From another source also, we obtain the following:—When a piece of steel is crooked, or when some portions of it are thicker than others, or the whole is very thick, the ordinary process of hardening in water is impracticable, as the piece would crack or twist. For this reason, when exactness is required in a piece of machinery, it is made of soft steel, though hardened metal would be preferable in most cases. The following process does away with the difficulties just mentioned. Let a vessel be half filled with clear water, half with oil; when the heated piece is blood-red, dip it in the upper layer of oil, and as soon as this ceases to boil let it go to the bottom into the water. This plan gives steel the proper degree of hardness for dies or pieces of machinery; it is unnecessary to soften it over a fire, as when hardened in water."—*Ibid*.

“*Improved Alloy.*—The alloy commonly used in the manufacture of printing types is composed of lead, tin and antimony. The best metal is, however, imperfect, as it is continually deteriorating while in a molten state by the evaporation of the most important element, antimony, which action is taking place during the whole time of the manufacture. In order to prevent this change of quality, Mr. Besley proposes the addition of nickel, copper, metallic cobalt, and bismuth—the nickel and cobalt being the materials used to give hardness, and the copper being the medium by which these substances are caused to unite with the antimony of the type-metal; while, by the introduction of bismuth, which has the well known property of passing instantly from fusion to fixity, the setting of the alloy is expedited.”—*Ibid.*

“*On Gold in the Form of Malleable Sponge.*—Mr. D. Forbes recently described to the London Chemical Society the following process for converting gold into the form of a malleable sponge, suitable for employment for dentists in the place of the ordinary gold leaf.

“Gold free from copper is dissolved in nitro-hydrochloric acid, keeping an excess of gold in the solution towards the close of the operation, so as to get rid of all nitric acid and avoid subsequent evaporation; any chloride of silver present is filtered off. The solution of gold is now placed in a flat-bottomed vessel and heated, and a strong solution of oxalic acid added; in a few hours the whole gold is deposited, and the supernatant liquid may be decanted off, taking care all the time not to disturb the gold at the bottom, and the vessel is then several times filled up with boiling water and decanted until the last washings contain no more oxalic acid.

“The gold is now carefully slipped on to a piece of filtering-paper, and by means of a spatula gently pressed into the form of the desired cake, but somewhat thicker; it is then removed to a porcelain crucible and heated for a short time somewhat below a red heat, when it shrinks in dimensions, becomes coherent and suitable for use. This process is essentially different from one patented and used in this country.”—*Ibid.*

“*Manufacture of Aluminium.*—Dumas recently announced to the French Academy that the problem of rendering the preparation of aluminium an industrial operation has now been solved. The methods have been devised by MM. Deville and Morin, and differ but little from those originally employed. It is necessary always to decompose the chlorid of aluminium, and decompose it by sodium, in order to obtain the aluminium. The chlorid is now made by the direct use of kaolin, or even of clay.”—*Ibid.*

“*Alloys of Aluminium.*—MM. C. and A. Tissier find that the valuable properties of aluminium are injured by the presence even of small quantities of other metals. One-twentieth of iron or copper make it almost impossible to work the alloy, while one-tenth part of copper renders aluminium as brittle as glass. An alloy of five parts of silver with one hundred of aluminium works like silver, but is harder and takes a finer polish. The one-thousandth of bismuth renders

aluminium so brittle that it cracks under the hammer, even after being repeatedly annealed. The presence of aluminium in other metals often communicates valuable properties when the quantity is not too large. Thus one-twentieth part of aluminium gives copper a beautiful gold color and hardness enough to scratch the standard alloy of gold employed for coins, whilst at the same time injuring the malleability of the copper. One-tenth of aluminium gives with copper a pale gold-colored alloy of great hardness and malleability, and capable of taking a polish like that of steel. Five parts of aluminium with one hundred parts of pure silver give an alloy almost as hard as silver coin containing one-tenth of copper, and thus permits us to harden silver without introducing a poisonous metal.—*Comptes Rendes*, xliii. 885.

“Debray has also communicated the results of experiments on the alloys of aluminium, apparently more numerous and varied than those of MM. Tissier.

“According to this authority it forms alloys with most metals, and in most cases the combination takes place with great evolution of light and heat. An alloy of ten parts of aluminium and ninety parts of copper, possesses greater hardness than ordinary bronze, and is worked when hot with more ease than the best soft iron. As the proportion of aluminium increases the alloys generally become harder; they become brittle beyond very narrow limits with gold and copper. These metals also lose their color, and soon become completely colorless. Aluminium becomes more brilliant and a little harder, still remaining malleable, with small proportions of zinc, tin, gold, silver and platinum. Iron and copper do not greatly injure the properties of aluminium if they are not in too great quantities; one or two per cent. of sodium, on the contrary, forms an alloy which readily decomposes cold water. For practical purposes, it is unnecessary that aluminium should be entirely deprived of iron. Metal reduced from impure chlorides, but of which the malleability and tenacity differed but little from those of pure aluminium, contained seven or eight per cent. of iron. The union of the two metals takes place with facility; the iron pokers with which the liquid baths are stirred in the furnaces where aluminium is produced, become covered with a brilliant layer of this metal. Aluminium contaminated with iron is purified by a simple fusion in nitrate of potash. M. Debray alloyed five parts of aluminium with ninety-five parts of iron, without imparting to the latter properties very different from its own. An alloy of zinc containing ninety-seven of aluminium and three of zinc is a little harder than the metal; although very malleable, it is equal in brilliancy to any other alloy of aluminium. Alluminium may contain ten per cent. of copper without losing its malleability, which is diminished, however; the metal reduced in copper trays contains from five to six per cent.; it is also worked with facility. With ten per cent. it becomes brittle, but remains white as long as the proportion of copper does not exceed 80 per cent. The alloy thus obtained is white and brittle, and resembles the metal of telescope mirrors. The alloy with eighty-five per cent. of copper is still brittle, but begins to grow yellow. The copper probably loses its color when it is below eighty-two per cent. which corresponds with $\text{Cu}^2 \text{ A}^1$. The aluminium bronze already mentioned

unites with the property of being forged when hot, that of great unalterability in the presence of hydrosulphate of ammonia. Its yellow color is fine, but inferior to that of the alloy of ninety-five copper and five aluminium. An alloy of three parts silver and ninety-seven aluminium has a very fine color, and is unalterable in presence of sulphuretted hydrogen. One part of aluminium and one part of silver give a material as hard as bronze. An alloy of ninety-nine gold and one aluminium is very hard, but malleable; its color is that of green gold. The alloy of ten aluminium is colorless, crystalline, and consequently brittle."—*Ibid.*

"*Oreide—A New Alloy.*—Messrs. Mourier and Vallent of Paris, have recently succeeded in forming an alloy which very closely resembles gold. The materials and proportions used by them are, pure copper, 100 parts (by weight); zinc, 17; magnesia, 6; sal ammoniac, 3.60; quicklime, 1.80; tartar, 9.

"The copper is first placed in a crucible in a suitable furnace, and fused. The magnesia is then added slowly, then the sal ammoniac, lime and tartar separately and in the form of powder. These are kept from the air, and well stirred with the copper for twenty minutes, until the whole are incorporated together. The zinc is then added in strips or fine pieces, thrust through the crust on the top of the copper. The whole mass is then thoroughly stirred, the crucible closed, and its contents kept in fusion for twenty-five minutes. After this the crucible is opened and skimmed very carefully to remove all the dross. The alloy thus formed is poured out into dry sand moulds if required to be rolled; if not, it may be poured into iron moulds. When remelted in a blast furnace, it is rendered more applicable for ornamental works of art.

"This alloy, it is stated, is very beautiful, resembles gold in many respects, and may be used in a pure condition, or as a base for gold plating. Its cost is about eighty cents per pound, and yet its appearance is such that it would readily be taken for gold by most casual observers.

"In France a law has already been passed to prevent frauds, by compelling, under severe penalties for neglect, all manufactures of "*oreide*" to stamp the word upon the articles produced.

"Castings made of *oreide* are cleansed with an ordinary pickle of sulphuric acid and water to remove the oxide. The zinc may be replaced with tin, but it makes the alloy more brittle.

"The manufacture of *oreide* has been recently commenced at Waterbury, Conn.—*Ibid.*

"*New Alloy of Silver.*—A new alloy, applicable for many purposes in place of silver, has recently been brought out in Paris. It is composed of silver, copper, and purified nickel, which metals may be combined in any suitable proportions; as silver, twenty parts; nickel, from twenty-five to thirty-one parts; and the rest up to one hundred parts in copper. An alloy is thus produced, containing twenty per cent. of silver, and constituting silver of the third degree of fineness, thus reversing the proportions of the ordinary compositions of the

second degree. The copper employed must be the purest obtainable, and the nickel should be purified by some suitable process.—*Ibid.*

“*Lactic Acid in Vegetables.*—Professor Wittstein, a German Naturalist, has announced the discovery of Lactic Acid, heretofore considered of exclusive animal origin, in vegetables, especially in the peduncles of solanum dulcamara, and in the liquid which dropped from freshly cut vine branches. It would seem the further researches are carried, the fewer distinctions remain between vegetable and animal substances.—*Journal of Medicine.*”—*Ibid.*

“*Metallic Alloy for the Formation of Medals, Small Figures, &c.** By M. VON BIERA.—Six parts of bismuth, three parts of tin, and thirteen parts of lead are fused together first of all in a crucible or iron ladle; the mixture is poured out and fused again, if it is to be employed in casting. It is almost as readily fusible as the well-known Rose’s metal, but, besides possessing considerable hardness, it has the particular advantage of not being brittle, because it possesses no crystalline structure upon the fracture. If the cast objects be bitten with dilute nitric acid, washed with water, and rubbed with a woollen rag, the elevated spots become bright, whilst the sunken portions are dull, and the casting acquires a dark grey appearance, with an antique lustre. Without biting, the color is light grey. Some casts of medals, taken with this alloy in plaster of Paris, were so successful, that the finest contours and the legend, which in the original were only legible with the lens, were completely reproduced. Calculated for 100 parts, this alloy consists of 27.27 bismuth, 59.09 lead, and 13.64 tin. As bismuth is expensive in comparison both with lead and tin, the quantity of lead might be increased, and that of the bismuth diminished, without injury to the valuable properties of the alloy. It is probable this mixture may be adapted for typographical purposes.”—*Polytechn. Contralbl.*, 1857, p. 888.—*Jour. Franklin Institute.*

“*Auben’s Gas Reflector.*—At a meeting of the Institute, “Dr. Rand exhibited Auben’s patent gas reflector. It consists of nine adjustable mirrors, arranged below and behind the burner, so as to reflect the light in any desired direction. It is cheap and convenient.”—*Ibid.*

“*On the Predisposing and Proximate Cause of Caries of the Teeth.* TO THE EDITOR OF THE MEDICAL CIRCULAR.—Sir :—It seems to be acknowledged by dentists that the teeth are never found to be decayed before they pierce the gum, but that they become so at a very early age in some mouths. This should go some length to prove that the proximate cause must be external chemical action.

“But let us first examine into predisposing causes. It is asserted by some, that acid fluids cause decay of the teeth, by proximate action; others, again, that the acid fluids cause decay by predisposing causes, acting upon the general circulation. These might be treated like the

* From the Chemical Gazette, No. 463.

‘two single gentlemen,’ rolled into one; we should then come to something like the truth, and thus put the question beyond dispute, when the preventive treatment is considered and admitted, nor does it require much expenditure of paper to elucidate the mystery.

“Any consideration of infantile health, either arising from a hereditary diathesis, or accidental disturbance, will influence the state of the teeth in a child; for from the first cause, the bones may not have received a sufficient amount of lime or gelatine in the composition—in either case, we have an imperfect osseous structure; consequently the teeth, as forming a portion of that system, would be subject to a certain extent to the influences of disease, or immunity from it. Teeth not having the necessary amount of gelatine would, of course, be more easily acted upon by any acid matter, with which they come in contact, and if the subject furthermore inherited a diathetical disposition to secrete acidulated fluids, the teeth being in immediate contact with the saliva, which entirely participates in all conditions of health or disease, would naturally and at once be acted upon, and if teeth so situated were imperfect in original composition, would be soon destroyed as a consequence; so we have both the predisposing and the proximate effect—the destructive action still external. Suppose we now examine the proximate cause of caries of the teeth.

“The most stubborn of the opponents of purely chemical causes for decay are now beginning to allow themselves convinced of this truth, and to retract a portion of their expressed opposition, but continue to hamper their arguments with ‘constitutional’ causes. Could they but see that constitution has no more to do with the matter than (if I may be allowed a simile) that a badly-constructed house would sooner be destroyed by the elements than a soundly constituted one.

“My researches into cause and effect have convinced me that the teeth are never attacked by caries from any of the causes usually assigned, viz.: lateral pressure, inflammation of a part of their substance, or constitutional defect in quality or quantity of composite matter. But we may instance external form, when deep interstices exist in the enamel; then these are a description of teeth liable to be destroyed from the facility for lodgment of acid substances.

“Lateral pressure is, no doubt, an obscure cause of caries, but not, as popularly supposed, that one tooth injures another by pressure, causing inflammation or death to that portion of their sides which are in immediate contact, but that the teeth, being thus densely packed together, afford a secure lodgment for corrosive matter; thus, a good argument exists for making room for their separation by extraction, that there may be space enough to allow fluids of all sorts to pass freely betwixt them, so as to attenuate and carry off all buccal mucus which hangs about such situations. We have many cases of very crowded teeth in good, sound, healthy people, but no caries; yet those persons soon lose their teeth from the absorption of the sockets.

“Of constitutional defects in quality we have many examples; for instance, cases where teeth are cut, without any enamel covering, are not always affected by caries, nor is it likely to take place if the salivary fluid be normal in composition; indeed, I question if they would be less liable, if covered by an abnormally composed enamel, as the

bone is protected to some extent by the presence of a larger quantity of gelatine or animal matter than the enamel, which is inorganic. The higher the organization of the bone, the less easily is it influenced by chemical solvents. The cementum, being the most organic of the hard tissue of a tooth, is the last to suffer from gangrenous decomposition.

"Keeping these facts in view, where is the man, with the slightest pretension to physiological acumen, who dares to assert, that a dentist may not prescribe the means both to prevent and arrest caries of the teeth? Now, it is allowed that the saliva contains principles which destroy the enamel of the teeth; is it beyond the art of the chemist to compose a neutralizing equivalent? Nay, I shall go further, and fall back upon the simple chemistry of nature, and adopt the rigid use of pure tepid water with the assistance of suitable brushes; and I can produce cases to prove that a rigid adherence to cleansing, has arrested decay in teeth so affected, and, to all appearance, prevented its attacking others in the same mouth. I am, &c.,

Med. Circular.] DONALDSON MACKENZIE, Saville row.

"*Fatal Pericarditis, caused by Lodgment of Artificial Teeth and Gold Plate in the Œsophagus.* Reported by J. R. BUIST, M. D., House Physician, Bellevue Hospital, N. Y.—D. M —, a Scotchman, aged forty, of full muscular development, but of very intemperate habits, was admitted to Bellevue Hospital, October 1st, under the supervision of Dr. A. Clark.

"His account of himself was, that on the day previous he had accidentally swallowed two of his teeth, which were then in his stomach, occasioning some pain and very uneasy sensations, in consequence of which, he could neither eat nor sleep. The man, however, confessed to have been just indulging in a long debauch, and was apparently on the verge of delirium tremens; so his story was regarded as a mere whim. Besides, the teeth were supposed to be natural ones, and if they should be in the stomach, it was thought that they would occasion no inconvenience. The patient was therefore allowed milk, teas, &c., and left to time. In a few days he seemed much better; the nervous tremor had subsided; he had slept some, and at his own request was discharged October 5th.

"On the 10th he re-entered the hospital, with the symptoms at first complained of much aggravated, and persisting in his story of having swallowed his teeth. There was severe pain at the epigastrium, extending around the left side to the spinal column, accompanied with constant nausea, a disgust for all food, and an entire loss of sleep. His countenance was anxious, and of a dusky paleness; tongue coated white, and moist; skin natural; respiration a little accelerated, and the pulse in the neighborhood of 100, very small and weak. There was no marked tenderness over the chest or abdomen. On being closely questioned, he made it known, for the first time, that the *teeth* he had swallowed were artificial ones, set on gold plate, all of which had slipped down his throat while eating some soup. All that was given to him in the way of medicine or nourishment, was immediately rejected. No improvement in his condition occurred after his admission. His pulse and respiration were not at any time of marked fre-

quency. Some thirty hours before death he became delirious; his face was of a livid hue, and a cold sweat covered the whole body.

"Death occurred at 9, A. M., October 14th. On inspection of the body, thirty hours after death, the stomach and intestinal tract were found healthy, with the exception of some congestion near the pyloric orifice of the former, and a superficial ulcer, probably post-mortem, at the greater cul-de-sac. On removing the sternum, the pericardium was seen to be greatly distended, thickened and inflamed. Through an accidental opening, a quantity of gas escaped, of a disagreeable, gangrenous odor. On laying the pericardium fairly open, several ounces of seemingly sero-purulent fluid, of a dark, greenish color, were seen; both of its surfaces were in parts disorganized; in other parts covered with a thick coating of lymph. Examining further into the adjoining tissues, a foreign body was discovered in the œsophagus, two and a half inches above the stomach, which had ulcerated through into the right and posterior part of the pericardium. This proved to be the teeth and a gold plate, the latter about one and a half or two inches long, and one inch broad. The lungs were congested to the last degree; other organs not examined. The specimen is now preserved in the museum of the hospital."—*Charleston Medical Journal and Review*.

Staphyloraphy.—Dr. Sanborn thus describes, in the "*Boston Medical and Surgical Journal*," what he claims to be a new feature in this operation "recently introduced by an English Surgeon, Mr. Pollock."

"The common cause of failure in this operation is well known, among surgeons, to be the dragging on the sutures, produced by the involuntary contractions of the palate, during and subsequent to the operation; and it is generally conceded that in order to perform the operation easily, as well as to effect the nice adjustment of parts requisite to secure a complete and firm union throughout, it is necessary to paralyze the *velum palati* by a division of the muscular structures which produce these spasmodic movements. The muscle chiefly active in producing the movements prejudicial to the success of this operation, is the *levator palati*; and a complete division of this muscle, if not absolutely essential, is certainly very favorable to a successful result.

"To lessen the chances of inflammation, it is very desirable to cut the parts involved as little as possible. The 'lateral incisions' of Dieffenbach are open to this objection of mutilation; and so also are random incisions about the pillars of the fauces. The point at which the *levator* can be divided with the least cutting is at the base of the *hamular process* of the sphenoid bone."

Staphyloraphy.—"Mr. Fergusson's operation of staphyloraphy we regard as one of the greatest improvements of modern surgery, and we notice it here because other operations of the same kind have recently been advocated. Mr. Fergusson divides the muscles which give an arched form to the palate with a knife bent at right angles. This particular form of knife enables him to divide the muscles without

injuring the soft palate itself. Mr. Pollock, of St. George's Hospital, has preferred the plan of cutting through the soft palate, and so dividing at the same time the levator palati on each side. Now, without doubting Mr. Pollock's success in performing his own operation, we are bound to say, from the results which we have witnessed in other hands, that we would recommend Mr. Fergusson's original way of doing the operation to those who have not had experience on the subject. There are many other original points of excellence in this work which we might notice, did our space permit. As a work on operative surgery, as we have said, we regard it as in the very first rank, and we trust that at some future time we may see its usefulness still further enhanced, by observing those scientific parts of surgery which do not involve mechanical operations as fully described as those that do."—*British and Foreign Medico-Chirurgical Review*.

“*On the Therapeutical Action of Chlorate of Potash, with a New Mode of Administering it.* By Dr. Dethan. (*L'Union Medicale*, June 4th, 1857.)—Dr. Dethan considers that chlorate of potash is a powerful sialagogue, and that its elective action on the bucco-pharyngeal mucous membrane is well marked. To this physiological action is added a very remarkable and valuable success in pathology; its rapid and incontestible effects in mercurial salivation, by checking the formidable mercurial affection, have permitted practitioners to continue the mercury without fear, and thus to contend without remission against the constitutional infection. As an especial and incontestable remedy in ulcero-membranous stomatitis, this medicine need not, according to the physicians of the Hôpital Sainte-Eugénie, be swallowed; its topical application is sufficient, and in a short time the mucous membrane recovers its normal qualities and functions. Dr. Dethan concludes that the chlorate of potash, administered under a special form, which would permit the local action to be exercised slowly and certainly, although leaving the medicine to be carried into the stomach in a state of solution with the mixed liquids of the salivary, buccal, and pharyngeal glands, would be the mode of administration which would combine all indications and all opinions. He therefore suggests the use of the remedy in the form of pastiles, so that the patient may have at hand a remedy against the injurious effects of a mercurial treatment which he may be undergoing. The experiments of Dr. Ricord, and the publications of M. A. Fournier, testify incontestably in favor of this successful simultaneous medication. In certain forms of angina attended with fibrinous exudations, it prevents the intimate adherence of the false membranes to the mucous membrane, and facilitates their expulsion, and assists the action of emetics. In this affection the topical action of the chlorate, favored by the bruising between the teeth, the natural solution in the liquids of the mouth, and its penetration into all the points interested, will be certainly efficacious. In debilitating diseases, such as diphtheritis, and gangrene of the mouth, the child will find an agreeable and reparative kind of food, together with the most appropriate remedy hitherto discovered, against those diseases.”—*Ibid.*

“Facial Neuralgia cured by Division of the Little Nerve passing from the Superior Alveolar Nerve to the Mucous Membrane of the Mouth. By Professor Schuh. (Wochenblatt der Zeitschr. der Gesellsch. d. Aerzte. No. 20, 1857.)—Marcus Weiss, aged fifty-five, miller, had always enjoyed good health until attacked by ague seven years ago; this continued for six weeks, and soon after a continuous pain affected the right side of the face, between the angle of the mouth and the masseter, which, from time to time, became more severe. These paroxysms were accompanied by slight twitching of the muscles on the corresponding side of the face; they would recur frequently on the same day, but often intermitted for several days. Change of temperature, chewing, and talking, exercised no influence on the production of the attacks. After the pain had lasted two years, the patient had two teeth of the right upper jaw extracted on account of severe toothache; the remaining teeth fell out. He used leeches and blisters to no purpose, and remained in the same condition for five years. During the ensuing two years the paroxysms became more frequent; mastication now induced severe pain; he underwent a variety of treatment in Vienna without marked benefit. For a year before coming under Dr. Schuh's treatment he suffered even at night, and sleep could not be secured by opium.

“When seen on the 26th February, 1857, he was spare, but otherwise healthy-looking, prepared to submit to any kind of treatment that might be suggested. No change of color or temperature was observed in the face during the seizures; there was no lachrymation, no rigidity of any kind; but there was slight perspiration at the time of the attack in the face. The permanent pain was described as residing at the inner side of the cheek, from where it radiated towards the ear during the paroxysms; less frequently towards the eye, and never towards the nose and upper lip. Neither gentle nor rough friction, pressure, pinching, nor talking, had any influence upon the attacks. The patient bore pressure upon the point of exit of the infraorbital nerve without pain. Dr. Schuh observed him during nearly three weeks before undertaking any operative proceeding, and satisfied himself of the futility of employing medicines. He was of opinion that the pain resided in the twig which passed from the superior maxillary nerve through the buccinator to supply the adjoining mucous membrane of the mouth. As it was manifestly impossible to isolate this nerve, Dr. Schuh divided the soft tissues from the angle of the mouth to the masseter; and having separated the mucous membrane from the areolar process of the superior maxilla, scraped off the muscular attachments of the buccinator from the sphenomaxillary fossa. Dr. Schuh made several parallel incisions in a slanting direction, so as to insure destruction of a portion of the nerve. No material hemorrhage occurred while the operator's finger occupied the sphenomaxillary fossa as a director for the instrument; but on its removal a considerable amount of blood was lost. From the time of the operation all pain ceased, and the patient, with the exception of an intercurrent attack of epidemic tonsilitis, recovered satisfactorily. He quitted the hospital before the wound was entirely healed, as the exfoliation of a small lamina of the upper maxilla was not completed.”—*Ibid.*

Extracts in relation to the Teeth, from Livingston's Travels in Africa.—"The zebra, giraffe, eland, and kukmaa have been seen mere skeletons from decay of their teeth, as well as from disease. The carnivora, too, become diseased and mangy; lions become lean and perish miserably by reason of the decay of the teeth. When a lion becomes too old to catch game, he frequently takes to killing goats in the villages; a woman or child happening to go out at night falls a prey too; and, as this is his only source of subsistence now, he continues it. From this circumstance has arisen the idea that the lion, when he has once tasted human flesh, loves it better than any other. A man-eater is invariably an old lion; and when he overcomes his fear of man so far as to come to villages for goats, the people remark, 'His teeth are worn, he will soon kill men.' They at once acknowledge the necessity of instant action, and turn out to kill him. * * * The "Babimpe tribe knock out both upper and lower front teeth as a mark of distinction." * * * 'The people who came with Sheakondo to our bivouac had their teeth filed to a point by way of beautifying them, though those which were left untouched were always the whitest.' Other tribes also adopt this same custom, and Livingstone observes, in relation to the people of Tamba, that 'they file their teeth to a point, which makes the smile of the women frightful, as it reminds one of the grin of an alligator.' * * *

"All the Batoka tribes follow the curious custom of knocking out the upper front teeth at the age of puberty. This is done by both sexes; and though the under teeth, being relieved from the attrition of the upper, grow long and somewhat bent out, and thereby cause the under lip to protrude in a most unsightly way; no young woman thinks herself accomplished until she has got rid of the upper incisors. This custom gives all the Batoka an uncouth, old-man-like appearance. Their laugh is hideous, yet they are so attached to it that even Sebituane was unable to eradicate the practice. He issued orders that none of the children living under him should be subjected to the custom by their parents, and disobedience to his mandates was usually punished with severity; but notwithstanding this, the children would appear in the streets without their incisors, and no one would confess to the deed.

"When questioned respecting the origin of this practice, the Batoka reply that their object is to be like the oxen, and those who retain their teeth they consider to resemble zebras. Whether this is the true reason or not, it is difficult to say; but it is noticeable that the veneration for oxen which prevails in many tribes should here be associated with hatred to the zebra, as among the Bakwains; that this operation is performed at the same age that circumcision is in other tribes, and that here that ceremony is unknown.

"The custom is so universal that a person who has his teeth is considered ugly. The disparaging remark would be made respecting boys or girls who still retained their teeth, 'Look at the great teeth!' Some of the Makololo give a more facetious explanation of the custom; they say that the wife of a chief, having in a quarrel bitten her husband's hand, he, in revenge, ordered her front teeth to be knocked out, and all the men in the tribe followed his example; but this does not explain why they afterwards knocked out their own. * * *

“A child who cut the upper front teeth before the under, was always put to death among the Bakaa, and, I believe, also among the Bakwains. * * * The women here are in the habit of piercing the upper lip and gradually enlarging the orifice until they can insert a shell. The lip then appears drawn out beyond the perpendicular of the nose, and gives them a most ungainly aspect. * * * This custom prevails throughout the country of the Maravi, and no one could see it without confessing that fashion had never led women to a freak more mad.” * * *

Near Tete, on the Zambesi river, “the women have only a small puncture in the upper lip, in which they insert a small button of tin. The perforation is made by degrees, a ring with an opening in it being attached to the lip, and the ends squeezed gradually together. The pressure on the flesh between the ends of the ring causes its absorption, and a hole is the result. Children may be seen with the ring on the lip, but not yet punctured.”

“*Nitrate of Silver in Toothache.* By J. S. Dixon, M. D., Tenn.—In the January number of your Journal I see mention made of the use of nit. arg. in carious teeth. I have been using it in my practice for several years, and have used it in my own teeth when they were aching, with decided relief. It can be used with less inconvenience than fluids. I generally place a piece about the size of a grain of mustard seed on a lump of wax, and then place it in the cavity of the tooth, and seal it over with the wax. It will destroy the nerve of the tooth.”—*Atlanta Med. and Surg. Jour.*

Truth Leads to Success.—“Every event in life is the natural result of an antecedent cause. The affairs of men are just as strictly governed by fixed laws as are the motions of the planets, and it is as impossible to succeed in a course of conduct which violates these laws, as to suspend the laws which govern organic matter. * * *

“Success in life is entirely dependent upon the relation our conduct bears to the Divine attribute TRUTH, on which is founded all the principles which govern us as men and as physicians.”—*Extract from Address by Geo. H. Hubbard, M. D.—New Hamp. Jour. Med.*

Effects of Alcohol.—“The direct tendency of alcohol is to produce inflammation of the organs to which it is applied—prominently the stomach and liver. Ordinarily, from the mode of use, this assumes the chronic form, and the secondary effect is impaired nutrition, involving, as we might expect, particularly the blood, adipose and nervous tissues.”—*Ext. from Prac. Suggestions, by J. A. Allen, M. D.—Ibid.*

Cause of Deterioration.—Dr. W. Budd states, (*British Med. Jour.*) “I have long thought it deserving of the most anxious inquiry, whether the growing deterioration and tendency to early decay, which dentists have remarked in the teeth of the rising generation, may not be due to the insufficient supply of the inorganic constituents of these important organs in the food, by which children are nourished during the period of dental development. In towns, especially, the mode of living, not

only of man, but of the animals which minister to man, is so artificial, and so few articles of diet are supplied under the primary conditions of nature, that such a contingency is quite possible. In default of better, Dr. Pidduck's biscuits, which contain lime derived from teeth, would furnish a simple means of meeting it. Rather more than a year ago, I suggested to an eminent druggist here the manufacture of biscuits of precisely similar composition, with a view at once to the teeth-bones of these young subjects."

"*Valerianate of Ammonia in Neuralgia.*—For some time back, Dr. O'Connor has been prescribing with success, valerianate of ammonia in cases of neuralgia under his care at the Royal Free Hospital. It has also been given in a few cases of epileptoid disease. In one case of paralysis of the facial nerve which did well, there was considerable pain along its course, sometimes of a very excruciating character. The valerianate of ammonia was administered with benefit, and in a very short time the patient got well. This remedy has been freely used in the Parisian hospitals, but especially in the Salpêtrière and the Bicêtre; and Dr. Tuffnell, Professor of Military Surgery in Dublin, has also tried it, and found it eminently successful."—*Braithwaite's Retrospect.*

"*Neuralgia*—The following plan of treatment is productive of most satisfactory results. A small glass syringe, with a perforated steel nozzle, is made to penetrate the tissues, for the depth of an inch or so, at the most painful spot, and about twenty minims of Battley's sedative solution is injected. This must be repeated, if necessary, good food and tonics being meanwhile given; the relief from pain is often followed by a rapid improvement in the general health, the appetite returns, and the disturbed nervous system is restored to a state of health. (Dr. A. Wood, Dr. G. L. Bonnar.)"—*Ibid.*

"*Traumatic Tetanus.*—A case of tetanus occurred here a short time since, in which the disease presented the peculiarity of having followed a mere blow on the nose. It terminated fatally in a fortnight with persistent trismus, but only one attack of general spasms. The treatment was by musk and opium."—*British Medical Journal*, Dec. 26, 1857.—*Medical News.*

"*Early Operations for Hare-lip.*—Dr. Friedberg relates (*Med. Chir. Rev.* July, 1856,) three cases of hare-lip performed at the following ages, viz: fourteen hours, ten hours, and three hours after birth. Chloroform was administered in each instance, and they all terminated favorably. The same writer advocates the early operation for hare-lip, in his recent work, *Chirurgische Klinik.*

"To these cases we may add the following: Dr. Dawson (*Dub. Med. Press*, 1842,) operated on a child having a simple hare-lip, seven hours after birth. The pins were removed in forty-eight hours, and in two days the union was so perfect that the mother, who had not seen her child, did not believe any deformity had existed. Mr. Bate-man operated (*Med. Times and Gaz.* 1854,) four hours after birth,

where there was also fissure of the palate, so great as to admit the mother's thumb. The operation succeeded, and the fissure of the palate contracted so as scarcely to admit the edge of a sheet of writing paper. Malgaigne advocates early operation, and has operated nine hours after birth. P. Dubois and Guersant prefer operating immediately after birth."—*Va. Med. Journal*.—*Atlanta Med. & Surg. Jour.*

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 “*Bleeding from the Ranine Veins*.—Dr. Aran recommends the abstraction of blood from the *vena ranina*, in acute and inflammatory angina, in laryngitis, stomatitis, acute glossitis, &c., as having a more durable and better effect than bloodletting from the arm, or leeching. The tongue is pressed upwards, with its point to the upper jaw, the mucous membrane divided by a few light strokes of the lancet, until the two (right and left) *venæ raninæ* are exposed, when an incision is made from above downwards as far as the veins are laid bare. The blood does not flow in a jet. A little warm water taken in the mouth promotes the bleeding. Keeping the tongue quiet is generally sufficient to control the hemorrhage; if not, pressure with a sponge, &c., is all that is required.”—*Medic. Newigk*.—*Med. & Surg. Rep.*

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 “*Paralysis of Facial Nerve*.—Deleau (*Gaz. hebdomadaire*) contends that paralysis in the facial nerves is only in the rarest cases an essential disease, while in most cases it is dependent upon *constriction* of the facial nerve in the Fallopiian canal. Hyperakusis, which accompanies facial paralysis, is a symptom of *internal otitis*, and the latter must become the subject of therapeutical means, if we wish to remove the facial paralysis.” [Easier said than done.—TRANSL.]—*Ibid.*

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Upon the Decomposition of Ether and the formation of Carbonic Acid Gas during Anæsthesia. By M. Olzanam.—“In a previous memoir, presented to the Academy in December, 1856, I laid down this general law: ‘All volatile or gaseous carbonized bodies are endowed with anæsthetic properties, and the higher the degree of carbonization, the more decided is the power possessed;’ and I have confirmed this law by the study of carbonic oxide gas. In the prosecution of this course of researches I propose now to demonstrate that the various ethers only act as anæsthetics, after being decomposed into carbonic acid gas, and solely in consequence of that decomposition. When we consider that, 1st, ether is a substance rich in carbon; 2d, that, according to the researches of M. M. Fille and Blandin, an etherized animal exhales twice the normal quantity of carbonic acid; 3d, that the inhalation of non-carbonated gas does not augment the carbonic gas exhaled—we shall be led to the legitimate conclusion that during etherization an increased quantity of carbonic acid has been generated, at the expense of the new substance that has been absorbed. In other words, when ether has been respired, it is decomposed in the circulation, and that decomposition gives rise to an abundant formation of carbonic acid gas.

“But we are now acquainted with the anæsthetic properties of carbonic acid gas: arrest of hematosiis, paralysis of the nervous system, all the phenomena of insensibility even to apparent death are then

realized. It is evident then, that under this new form, resulting from decomposition, ether exerts its stupefying and anæsthetic power upon the nervous system.

“What occurs in the case of ether, must also, without doubt, take place with chloroform, amyline and other anæsthetic substances; each of them, according to their chemical affinities, may be decomposed into either carbonic acid or carbonic oxide.” A. S.—*Penin. Jour. of Med.*

Electricity by Induction.—“The tympanum has been electrified with success in nervous deafness; and in loss of smell or taste, the Schneiderian membrane, or the tongue and palate, may frequently with success be subjected to the same process.”—*Braith. Ret.*

“Foreign Body in the Œsophagus.—Caution to wearers of False Teeth.—SIR:—At the midnight hour of Thursday, the 12th ultimo, my first deep sleep was rudely broken by the violent ringing of my bells, both day and night; upon responding to which from the open window, a well known voice salutes the ear,’ and piteously but weakly craves admission and relief.

“Admitted, my patient crawled feebly to, and sunk upon an easy chair, and with a ghastly, gasping countenance pointed significantly down her throat, ejaculating, ‘teeth,’ ‘plate,’ ‘gold,’ ‘swallowed;’ another moment, and my forefinger is exploring pharynx and œsophagus, but, for the time, in vain; the lost property was beyond my grasp, until the heaving retchings excited by my finger in the gullet, raised the golden treasure to its tip, to sink again instantly.

“Having thus ascertained the position of affairs, my next care was to arm my right hand with a pair of long, and well curved polypus forceps, to oil my left forefinger, and drive it deeply in the gullet; following this finger with the forcep-blades, I opened wide their gripe, and waited for the rising of my game; nor had I long to wait: a moment, and the forcep closed upon the prey, and straightway is withdrawn from its awkward situation no less formidable an article than a full-sized golden upper plate, or dentist’s piece, carrying eight artificial teeth, a golden clasp, and (*horrible dicta!*) a golden spike or pin, full half an inch in length, of which the office was to perforate a stump, and keep the whole *in situ*; that this had scratched the lining membrane of the tube seemed plain enough; a streak of blood, much after pain, and many days’ disphagia spoke of much mischief done. Now all is well again.

“For once a grateful patient hails our art with joy, and lauds it to the sky, vowing eternal gratitude for her safe delivery, and earnestly requesting publicity for the facts, as a future warning to unwary wearers of the dentist’s work; acknowledging her folly in sleeping with a set of teeth which more than once before had been found loose in her mouth on waking. On this occasion, failing to extract them from her throat, she had made the rash attempt to swallow them entire, in which she would, no doubt, have prospered, but for the sharpened pivot-pin, by which it lodged itself within her gullet, at least one half way down.

I am, &c.

Med. Times & Gaz.]

“A PROVINCIAL PRACTITIONER.”

“*Permanganate of Potash*.—This substance in solution possesses the property of removing all noxious and fœtid odors, and in the solid form it possesses caustic properties. It may be used as a lotion, twenty grains to the pint, to ulcerated cancerous tumors, when it removes the fœtid odor and causes the place to assume a much more healthy character. In the solid form, it may be used to destroy cancerous masses. If a little of it, mixed with water, and spread over a plate, be placed in a sick chamber, all offensive odor will disappear.” (Dr. G. F. Girdwood.)—*Braith’s. Ret.*

“*Permanganate of Potash as an Astringent*.—Mr. Lloyd, in some remarks to his class the other day, in his Syphilitic Ward at St. Bartholomew’s, spoke very highly of the good effects which he had obtained from solutions of the permanganate of potash used in cases requiring astringents. We understand that the same remedy is much employed at the Liverpool Infirmary for the removal of fetor from sloughing wounds, etc. The power of the solution as a preservative fluid, is well known. Mr. Lloyd stated that he had begun with five grains to the ounce, but increased it to a drachm. In one case of very chronic leucorrhœa, in which the lips of the os uteri were swollen and spongy, it had effected a complete cure, after many other remedies had wholly failed. It is being used at St. Bartholomew’s as an application to warts, etc.”—*Med. Times & Gaz.*

“*Conium in Indurations of the Tongue*.—Conium in very large doses is a favorite remedy with Mr. Lloyd, of St. Bartholomew’s. An interesting case has been recently discharged from his care, in which an indurated lump in the tongue very markedly softened down under its use. The patient was a married woman, aged 47, who had had several miscarriages, but no living children. Her aspect was suggestive of syphilis, but there were no positive facts either in the history or existing symptoms. When we saw her last, she had taken the conium (in doses of five grains, gradually increased to a scruple, three times daily) for several months, and the induration, which had been large, and had occupied the centre of the organ, had all but vanished. It had been suspected, at first, to be of malignant nature.”—*Med. Times & Gaz.*

“*Another death from Chloroform*.—A gentleman, by the name of McChesney, died suddenly, in Toronto, Feb. 1, in a dentist’s chair, after taking chloroform for the purpose of having teeth extracted.”—*Boston Med. & Surg. Jour.*—*Med. News.*

“*Excision of the Tongue*.—On the 8th inst., at noon, there was great excitement exhibited in the surgical ward and operating theatre of the Royal Infirmary, Edinburgh, resulting from the expectation of a very formidable surgical operation taking place that morning. The patient had for a long period suffered from cancer of the tongue, and Professor Syme had determined upon removing the organ bodily. Shortly after twelve o’clock, the man was led into the theatre, placed

upon the table, and quickly rendered powerless through the influence of chloroform. Mr. Syme commenced by making a vertical incision through the integument covering the chin, and then sawed through the lower jaw at the symphysis. The division being made, he next proceeded to cut away the tongue at the very root, close to the hyoid bone. The arteries were quickly tied, and the hemorrhage was comparatively little, the man having lost only a few ounces of blood. The jaw was again placed together, and the integument sewed up. The patient was able to walk out of the room. At the close of the operation, Professor Syme remarked that the removal of the tongue bodily had been successfully performed in Italy, but the *modus operandi* was of a different nature, the incisions having been made entirely in the throat but he considered that that mode was attended with more danger than the one he had chosen to adopt. The patient has continued well ever since, being fed with a tube. He can now, however, swallow, and a few days after the operation he spoke, or, rather, breathed out the word 'milk.' He is cheerful, and gives every hope of recovery."—*Lancet*.—*Med News*.

Reproduction of Parts.—"There are occasional examples, moreover, in which this regenerative power has been prolonged to an unusually late period—thus, an instance is recorded, on authority, that can scarcely be doubted, of the thrice-repeated reproduction of a supernumerary thumb, after it had been twice completely removed, and the author has been assured by a very intelligent surgeon, that he was cognizant of a case in which the whole of one ramus of the lower jaw, having been lost by disease in a young girl, the jaw had been completely regenerated, and teeth were developed and occupied their normal situation in it."—*Carpenter's Physiology*.—*Pacific Med. and Surg. Jour.*

"*Excision of Cancer of the Lip, and Recurrence on the Opposite Side*.—Mr. Curling has at present under care in the London Hospital, an old man, from whom about six years ago he excised an epithelial cancer of the lip. The ulcer existed at the left extremity of the lower lip, and there was no disease of the glands. It was freely removed, and quickly healed soundly. Five years afterwards the man came under the care of Mr. Luke, for a cancer of the opposite extremity of the same lip. The scar of the former operation was quite sound, and there was a large portion of healthy structures intervening between it and the recurred growth. Mr. Luke excised the diseased portion—good healing followed. The man is now under Mr. Curling's care, for an open cancerous ulcer, resulting from disease of the glands under the jaw of the side last affected. We have in this case an interesting proof of the existence of a constitutional predisposition in epithelial cancer, and also of the influence of irritation in localizing the outbreak. The man is a smoker, and formerly smoked on the side where the first cancer appeared; after the operation he changed sides, and in the course of years the same irritation produced a cancer in the new site." *Medical Times and Gazette*.

*“On Some of the Causes that Vitiates the Air Inhaled into the Lungs.—To the Editor of the Medical Times and Gazette.—SIR :—*I owe some apology to my medical readers for presuming to treat a subject which lies more within their province than mine, and which is consequently better understood by them.

“My apology is, that my practice, although not strictly medical, has many features in common with that science, and cases are constantly presenting themselves respecting which, if revealed in time to the physician, or if even suspected by him, upon consultation, much suffering might often be spared.

“‘A drop will make a stone hollow, not by force, but by often falling.’

“Although the present subject has occupied my attention for many years, it might possibly have still remained semi-dormant in my mind, but for the casual re-encounter with an old friend, and the possession of a little leisure.

“This gentleman complained of the continual presence of headache, dyspepsia, etc. He is a regular liver, occupying a sufficiently salubrious residence, with no particular confinement to business or adherence to habits which might predispose to disease, if I except the frequent solace of a gradually darkening meerschaum. Now I do not intend to re-open the tobacco question, for in this case I conceive the meerschaum to have been only the secondary evil. He asked me what I thought of his case? This was both a delicate and difficult question for me to answer, as he had already informed me that his medical friends had failed to relieve him.

“In the practice of physic I should have been completely at sea, but long practice in my own profession, combined with some observation, has awakened my sense to the insidious advance of disease from a cause, the very insignificance of which shrouds it from the observation of the medical world.

“While in conversation with the gentleman alluded to, I found it necessary to keep out of the influence of the noxious effluvia with which his breath was loaded. I ventured to remark that such might be an *exciting* cause of his sufferings. He had his mouth thoroughly cleansed with directions to keep it so; his breath is now pure, let us hope his blood will follow suit.

“With this parenthetical illustration I shall begin by touching lightly upon the influence of pure and vitiated air upon the blood as necessary to my subject; but in this I do not lead, but follow.

“The air is composed of two gases, which widely differ from each other in their nature. Oxygen and azote, a portion of the vapor of water, and a portion of carbonic acid; this ethereal compound occupies a space around our earth something more than 45 or 50 miles in a diverging radius from the surface, and is only changed in its chemical properties by emanations from the earth or sea.

“We may infer from this circumstance that nature has so ordered that pure air is the principle of life, the vis inertia of existence; its influence is at once felt upon the system; it communicates a joyous, bounding feeling to the senses, improves the appetite, strengthens the frame, improves the texture of the skin, and imparts a roseate hue to

the countenance ; while the action of vitiated atmosphere has a depressing and melancholic tendency, the circulation becomes feeble, the limbs languid, digestion impaired, the sight weakened, flitting, pulmonary pains are experienced, with other concomitant disorders ; the lungs being thus deprived of the proportion of oxygen required to aerate the quantity of blood passing through them.

“ ‘There is scarcely a day passes in which a well employed medical man does not meet with some instances in which health has suffered or recovery has been retarded by the thoughtless or ignorant disregard of the value of pure air to the animal economy.’ This passage from Dr. Andrew Coombe offers at once sufficient apology for particularly drawing attention to the subject.

“ There is little difficulty in the rich and well-to-do escaping from miasmatic, or any impure conditions or influences, when aware of their existence ; but in my following remarks I shall endeavor to show that many unwittingly carry with them into their retreats what they would fly from, as exemplified in my parenthetical illustration. What in such a case would be gained by flying for relief to the breezes on the mountains, or the blasts on the ocean, where each inhalation is deprived of its vivifying power in its passage through the mouth to the lungs ?

“ I have been for a lengthened period impressed with the belief that caries of the teeth arises from one cause alone, viz., the chemical agency of the salivary admixture, quite independent of food, or drink, in its proximate action ; and although we are well able to characterize individual cases, I am afraid we are not yet prepared to generalize upon the subject. Certain it is, that some districts, and even countries, are scourged by this malady, where others are comparatively free from its attacks ; inhabitants of humid districts are known to be great martyrs to decayed teeth. Here we have a diagnostic cue, which might be worked out if space permitted. However, it seems to be a physiological truth, that the atmosphere will influence the fluids of the body to a condition of health or disease.

“ In robust normal life diseased teeth are seldom present ; in phthisical diathesis carious teeth are seldom absent ; and when this exists to any extent I should hardly fear contradiction if I assert that the disease was much aggravated by the effluvia arising from their influence, vitiating the respired air ; and the case, I should imagine, would be further aggravated by the use of a respirator. * * * *

“ I have already stated that caries of the teeth does, in my opinion, arise solely from the destructive influences of the salivary admixture, and this action is frequently found to be so active, that the whole of the teeth are destroyed before the age of twenty. When, in a case of this nature, we insert teeth composed of animal matter with this knowledge before us, we must commit something approaching a robbery upon our patient ; nor is the pecuniary loss the end of the evil, for we have not only the blood impoverished by the noxious inhalation, but the stomach destroyed by continually swallowing particles of decayed animal matter.

“ Although we find that the salivary fluid changes from acid to alkaline, and *vice versa*, often more than once in a person’s lifetime, yet this is not invariable, for we find this abnormal condition of the saliva to endure often throughout existence. * * *

"I do not think I can be accused of using too strong language when I assert that no amount of pure atmospheric air could restore to health any patient who was compelled to inhale it through the noxious effluvia which emanates from a set of putrifying teeth, whether normal or artificial.

"If I can succeed in drawing the attention of medical practitioners to the evil effects upon health produced by the means I have thus far adverted to, much suffering may be avoided, and probably even life sometimes saved. I am, &c., DONALDSON MACKENZIE.

"Saville-row W., Oct. 1857.

"*Chlorate of Potash in Ptyalism.*—The powers of chlorate of potash in arresting ptyalism, although now usually had recourse to by most of our hospital physicians, are still not so widely known as they deserve to be. Given in doses of a scruple every four hours to an adult, and in proportionate ones to younger patients, this salt will, in the course of a few days, mitigate in the most marked manner all the distressing symptoms of this affection. The gums acquire firmness, and the flow of saliva diminishes. Although this point must not be regarded as settled, yet we know of no reason for believing that it exercises any influence in preventing the good effects of the mercurial upon the system generally. It probably merely cures the inflammation of the mouth. With regard to its potency in the latter direction, the results of careful experiments were recorded a few years ago, almost coincidentally, by English, French, and Swiss observers, all uniting in deeming that its efficacy was beyond the reach of the slightest doubt. In ordinary cases, a week is sufficient for a complete cure; and its benefits are usually perceptible in the course of twenty-four hours."—*Ibid.*

"*Morbid effects of Diseased Teeth Upon the General System.*—By F. D. Thurman, Dentist, Atlanta, Ga.—As the teeth and their delicately constructed membranes are so directly connected by nerves and blood-vessels with the general system, it is not surprising that so many sympathetic affections should originate from this source, particularly when we take into consideration the fact, that the teeth are situated so near the brain, the locality of so many important nervous centres; and, also, the fact, that the periosteal tissue which surrounds the roots of the teeth (and is so often diseased) is but a reflection of the mucous membrane which lines the stomach, bowels, lungs, and whole internal viscera. But, notwithstanding the fact, that diseases of the head, throat, stomach, lungs, &c., so often originate with diseased teeth, it is only within the last few years that physicians are beginning to call the attention of the profession to the importance of the morbid relation existing between the teeth and other parts of the system; and even now, its importance is comparatively overlooked. They very often describe the cause of acute disease in children to the irritation produced by the eruption, or cutting of the temporary teeth; but whilst they seem well convinced that sound teeth pressing upon sound gum will produce acute diseases in children, they seem to overlook, in a measure, the important fact, that diseased teeth, with their inflamed membrane and vitiated secretions, may, upon a less irritable nervous system, produce chronic diseases of a most serious nature.

“If we were not a degenerate race of people, and the constitution and health of mother and child were always perfect, we would never hear of such a thing as painful dentition; but, like the inferior animals, our teeth would frequently be ready for use before their presence had been observed. But, as it is otherwise, we must bear the penalty of violated laws of nature.

“If the constitution and health of the child is perfect, nature is always ready and able to prepare the way for the growing tooth in a natural and painless manner. But children are seldom born with perfect constitutions, and those who approach nearest to it are generally rendered feeble by the inability of their delicate stomachs to digest the quality or quantity of milk it gets from an unhealthy or innocently imprudent mother, to say nothing of the *good things* it soon learns to cram, which gratify the palate and ruin the stomach.

“A diseased or painful dentition generally shows itself by a swollen, inflamed and very sensitive condition of the gums, more or less fever and irritation of the bowels, flow of saliva, pressure of blood to the head, thirst, &c. These symptoms generally attend all of the milder forms of painful dentition. In the worst forms all of these symptoms are aggravated; the child starts and screams in its sleep, stupor and convulsions set in, and death often relieves the little sufferer.

“*Treatment.*—Very frequently the child may be suddenly and effectually relieved by very carefully and perfectly separating the gums and membranes, and freeing the rising tooth. If the operation is not thoroughly performed it is worse than useless, as it only adds to the little patient’s suffering without affording any relief. The state of the bowels should be very strictly attended to, and remedies administered according to the symptoms presented—such as mild purgatives, alkalies, cold and warm bathing, fresh air, &c., &c.

“The eruption of the second set, or permanent teeth, is seldom attended with much pain or inconvenience, with the exception of the *dentes sapientiæ*, or wisdom teeth, which often produce a great deal of trouble, such as a high state of inflammation of the gums, which frequently extends to the throat and trachea, and occasionally involving the lungs; fever, acute pain in the gums, headache, inflammation of the eyes, &c., &c.

“In a large majority of cases relief may be obtained by freely separating the gums down to the tooth; but we sometimes find the tooth so crowded between the ramus or angle of the jaw and the second molar, that extraction is the only means of relief.”—*Atlanta Med. & Surg. Journal*.

“*On the anæsthetic action of Carbonic Oxide.* By Dr. Ozanam. (*Archiv Gén. de Méd.*, July, 1857.)—Dr. Ozanam relates the particulars of thirty experiments, of which twenty-five were on rabbits and five on man. These experiments prove unquestionably that this gas possesses anæsthetic properties, and these properties Dr. Ozanam considers to be more energetic than those of chloroform, but also more fugitive. He considers, moreover, that the gas is more easily respirable and far less unpleasant than the vapors of chloroform. It is not pretended that the inhalation of this gas is more free from danger

than that of chloroform; on the contrary, more than one of the rabbits is said to have passed suddenly and unexpectedly from apparent to real death.

"The gas was obtained from oxalic acid by the aid of sulphuric acid and heat, the carbonic acid produced at the same time being got rid of by passing the two gasses—carbonic acid and carbonic oxide—through water."—*Half-Yearly Abstract*.

"*Saleratus and the Teeth*.—The small excitement which some dentists are endeavoring to get up on this question, requires that we should again say something on the subject. Our opinion as to the cause of the decay of American teeth, which will be found expressed on page 83 of the present volume of the *Scientific American*, we still adhere to, namely, that it is principally due to our climate, and not saleratus. We know persons, members of families, by whom the use of cream of tartar and saleratus is carefully avoided, and their teeth are as bad as those who do use these articles in their daily food. Again, no experiment of placing human teeth to steep in solutions of these substances can be satisfactory, for if you immerse a tooth in vitriol, it will be corroded, yet no one has attributed the rapid decay of teeth to the vitriol with which our vinegar is often adulterated, yet with equal truth it might be.

"There can be little doubt that decayed teeth do not proceed from one cause, but many. These are trifling in themselves, but, when added up, make a big sum. If we must instance any of these causes, we should give the extreme heat of our summers, when we indulge in iced water, and the arctic cold of our winters, when everything we eat and drink is made as hot as possible. These sudden changes and opposing influences, from heat to cold, cannot but affect the teeth, and by acting on their mass may render the enamel brittle, so that it breaks and leaves the softer parts to be eaten away by any corrosive substance that may be taken into the mouth.

"There is also every evidence to prove that the eating of candies is injurious to the teeth, and that we indulge in them too much. In conclusion, we would add that did we eat and drink with more regard to the climate in which we live than we do, not only our teeth but our general health would be improved."—*Scientific American*, Dec. 26.

"*Fluid Bronze*.—The ordinary bronzes are of some trouble to apply, but the inventor (H. Hoffman,) has succeeded, by a combination of gilding powder, any of the common bronze powders, and collodion, in making an article which can be applied to wood, stone, or metal, with ease and certainty. It may be had of H. Bridgeman & Co., publishers of the *Druggists' Circular*, 36 Beekman street, New York."—*Scientific American*, Oct. 17.

"*Diamond Cement*.—"The common diamond cement for glass and china is composed of isinglass soaked in water until it becomes soft, then dissolved in proof spirit, to which a little mastic, dissolved in alcohol, is added."—*Scientific American*.

Effects upon Lead of Frequent Meltings.—"As you state, we know that lead becomes brittle after several meltings and coolings; we have never made any experiments to restore it to its previous softness and ductility. We have been assured, however, that if it is heated up to a point very near, but not quite high enough to melt it, and then plunge it in cold water, it will be restored to its former softness. It will not be very troublesome for you to try the experiment."—*Scientific American*.

"On Bleeding from the Ear, as the result of violence applied to the chin. By M. A. Morvan.—After a careful examination of several cases, M. Morvan arrives at the following conclusions:—

"Hemorrhage from the ear resulting from violence applied to the chin, may be or may not be accompanied by laceration of the membrana tympani.

"According to the case, the injury will be either fracture of the glenoid cavity, or fracture of the petrous portion of the temporal bone or both combined.

"When there is hemorrhage from the ear without laceration of the membrana tympani, we may discard the idea of a broken petrous portion of the temporal bone; and the probability is, that the injury is only a fracture of the glenoid cavity.

"When the glenoid cavity is fractured, besides the hemorrhage from the ear and the entire state of the membrana tympani, the articulation of the jaw is generally so sensitive, that the deglutition and mastication are either extremely difficult or altogether impossible.

"When the petrous portion of the temporal bone is broken, there is usually laceration of the membrana tympani, as well as hemorrhage from the passage.

"If the glenoid cavity and the petrous portion are alike broken, there will be not only bleeding from the ear and laceration of the membrana tympani, but also difficulty of masticating and swallowing."—*Archiv. Gén. de Méd.*, 1856.—*Half-Yearly Abstract*.

"Intermaxillary Bone from a Child with double Hair-lip.—Dr. Jackson showed the specimen. The child, which was otherwise well formed and in robust health at the time of birth, lived four months, and died probably from deficient nourishment, consequent upon the difficulty of taking food. The bone was quite projecting, and contained the four upper incisor teeth, resembling that of the lower animals."—*Boston Med. and Surg. Jour.*

"Potash from Felspar.—Dr. Meyer, of Berlin, by igniting an intimate mixture of felspar and lime, and digesting the mass in water, under a pressure of seven or eight atmospheres, has extracted from nine to eleven per cent. of potash from the mixture."—*Proceedings of the Pharmaceutical Association*.

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For the Dental News Letter.

PREPARED CHALK AND LIME-WATER.

BY J. D. WHITE.

A great deal has been written on the cause of dental caries and its treatment, but nothing seems as yet to have become very practical; cleanliness, plugging and filing, seems to be the principal reliance in the treatment, but we believe a great deal else may be done. Three young ladies, of a neighboring State, all under twenty years of age, of the blond temperament, were sent to us, in company with their mother, by an eminent physician of their neighborhood. Their teeth were very much decayed, and we sent them away, saying there was too much to do to take them at that time into our practice. Their medical adviser, however, called to see us to induce us to take them in charge. We consented to do so, providing he would first put them in condition, as in their state of health, we did not think it worth while to operate. Many of the back teeth were decayed down even with the gums, and some had lost the enamel, as though it had sloughed off, leaving the crowns of the teeth sound. The buccal surfaces only of many of the teeth had lost the enamel, forming superficial cavities. All the front teeth, upper and lower, were more or less decayed on their approximal surfaces. There was no tartar on the teeth; but they were covered, more or less, with a white scum like cream, and the margins of the cavities were bounded by a white line, as if it were the decomposed enamel. Where the dentine was denuded of the enamel, it was a little more yellow than natural. Their mouths presented a viscid and clammy appearance; the margins of the gums red, and slightly ulcerating, and the breath of a sweetish odor; the skin generally slightly feverish and dry. They commenced with the use of prepared chalk, as a dentrifice, and the doctor prescribed a wineglassfull of lime-water three times per day. This was continued for three months, at the end of which time, many of the superficial cavities had become polished, and the progress of decay arrested, the secretions of the mouth less clammy, and the white sediment disappeared. We

know that these changes frequently take place spontaneously ; but in these cases, the change was so directly following the treatment, that we believe it was due to that cause ; besides, the general health of these patients improved very much. On one occasion, they were absent from home for about four weeks. Upon their return, they visited us, and we remarked a return of the appearances first described, and we inquired if they had been using the chalk and lime-water, as usual ; they said they had not. Their mother said she wished us to see them before they commenced its use again, in order to test whether we could detect the change. The chalk is used constantly as a dentrifice, but the lime-water is only used as the white sediment appears about the teeth and gums. It is about three years since these cases were commenced, and very little decay has taken place on the approximal surfaces of the teeth. The stumps of the teeth are all sound yet and hard, and where only the enamel had been lost, the dentine is quite hard and polished.

There was a child, about five years of age, brought to us about two years ago, whose teeth were very tender, and the enamel softening and falling off like lime ; no deep-seated cavities, and of the same temperament as the first cases described. We ordered the use of chalk, and requested the parents to see their family physician, to prescribe as much lime-water as he thought the child could bear, and to continue it as long as he thought proper. The decay of its teeth has entirely ceased.

A young lady called on us about four years ago, of the same temperament as described above, and about twenty years of age. All her back teeth were decayed down to the gums, or nearly so. We could only plug the six front teeth, and some of them required three plugs. We ordered the use of chalk and lime-water. She has not had a tooth plugged since, and her health is very much better than it had ever been.

We were operating for a large family of children of an eminent chemist of Philadelphia, some years ago, all of whom presented the kind of decay mentioned. We ordered the use of chalk and lime-water, and so remarkable was its effects, that their father required them every evening before retiring to rub the chalk between the cheeks and the teeth ; he said he never saw anything act so well. We saw a patient a few days ago, who adopted this treatment eighteen years since ; and teeth that then had lost three sides, presenting only a kind of pyramid, are still entirely sound and useful. The secretions of the mouth are decidedly acid in their reaction, and anything that

will correct that locally, as the chalk does, and generally as the lime-water seems to, when used internally, by altering the blood, will modify the character of the decay. These patients, after pursuing this course for a while, deposit tartar, and some of the superficial cavities fill up with it. It is said that the saliva is alkaline in its character, but when mixed with the secretions of the mouth, it is not so. We once tested every patient who came to us, for some months, with litmus paper, and in every case it was changed immediately. We believe the beneficial effect in these cases described, and hundreds of others, to be due to the simple remedies employed, and leave it to an enlightened profession to help us out in solving the great problem: What is useful in arresting the terrible ravages of the decay of the teeth?

For the Dental News Letter.

“CHEOPLASTIC” METAL—ITS PRETENSIONS AND MERITS.

BY B. WOOD, M. D., DENTIST.

(Late Associate Editor of Southern Journal of Medical and Physical Sciences.)

The metallic alloy recently patented by one of the professors of the Baltimore College of Dental Surgery, and strongly recommended to the profession by some of its most prominent members, especially by professors of that widely-noted institution, has naturally awakened much attention. Not conceiving it to be what is claimed for it, and observing that our dental journals have been remarkably silent on this side of the question, thereby, if not directly corroborating, seeming to acquiesce in the claims set forth, (although probably only awaiting for further developments in the premises,) I have thought a somewhat extended examination into the subject might not be without interest.

Upon its first announcement, backed by so many respectable names, who could hardly be deceived, I confess to entertaining the highest hopes in regard to it; but failing to learn what were its constituents, or to obtain a specimen by which to test its virtues for myself, either of the patentees or of their agents, I began to feel some doubts, and concluded to await further light. I did not question, however, but that the metal which aspired to rivalry with gold and platina, might prove a valuable substitute for inferior materials. But this hope has given away before a knowledge of its components and the ordeal of experimental tests. Let us by these lights examine its actual merits. But first let us review some of the extraordinary claims set up for it.

Professor Blandy, in his circular to the profession, states at the outset, in general terms, as follows:—

“This new process, of which I am the inventor, has become, through its adoption by many of the leading members of the profession, a fixed and reliable practice, in most cases, to the exclusion of all other methods, and must be in its perfection universally preferred by both operator and patient.” * * * “In no case, nor under any circumstance, has the skillful application of Cheoplasty been attended with other than complete success.”

After some further remarks, he conveys the idea that, by the discovery of some peculiar laws of “chemical combination,” till now shrouded in obscurity, he has succeeded in transforming certain metals hitherto oxidable, subject to galvanic influences, &c., into a new metal, with altogether different characteristics, and possessed, indeed, of every quality requisite for dental purposes. “That this Cheoplastic metal,” he argues, “is capable of resisting oxidation under ordinary circumstances, or that it is free from galvanic influences, free from metallic taste, is not more strange than that certain combinations of metals produce different qualities than are found in their constituents, such as ductility, malleability, hardness,” and the like.

What is thus asserted or implied, is next backed by an imposing array of analogies, drawn from chemistry and metallurgy, well calculated to overawe the skepticism of some, and inspire the confidence of others, especially after the emphatic assurance, —“I present facts alone, substantiated by the very highest and most *unquestionable* authorities.”

It is to be remarked, that although he speaks in this connection of tin—the chief constituent of this cheoplastic metal (although he does not reveal the fact)—of the strange “conduct of tin under the action of acids, &c.,” he does not venture to assert that tin alone is “capable of resisting oxidation under ordinary circumstances,” “free from galvanic influences,” “free from metallic taste,” and the like, but leaves it to the full force of such objection, until, indeed, transmuted by his process of combination into “cheoplasty,” it becomes at once exempt from oxidation, &c. He prepares us for the reception of such anomaly, by stating, as a fact in chemistry, that metals easily acted upon alone, or in certain combinations, by one acid, in other conditions of alloy remain untouched.” As an instance, he specifies the metals platina and bismuth, wherein he informs us that the action of hydrochloric acid—which he says is the “especial solvent of bismuth”—upon this metal “is instantly arrested by the contact of a small piece of platina,” and that the alloy of these metals “remains unaffected in this acid.” But hydrochloric acid, instead of being the especial solvent of bismuth, has scarcely any action upon it; even

when heated, its action is very slow and feeble, and none the less so, when in connection with platina. Perhaps, however, he meant *nitric acid*, (which dissolves bismuth vehemently,) since it is stated in "Piggot's *Dental Chemistry and Metallurgy*," that the process of solution in this acid "is immediately arrested by laying a piece of platinum on the metal bismuth." But the truth is, that the action of nitric acid upon bismuth is not diminished, but perceptibly increased, by the contact of platina, as any one may test for himself.

We might examine the validity of these paraded analogies throughout, were our object to point out the signal inaccuracies, and perversions of chemical facts, which they display, but we only intended to show the specious claims set up for this "*new metal*" by way of contrast with its naked merits.

The circular proceeds,—implying a great deal more than it directly avers. It speaks of the development of unlooked-for properties in alloys from "a certain combination" of their components; of galvanic and electrical agencies on metals; of their precipitation from solutions "in pure crystals," by the contact of other metals, "producing *pure crystalline deposits*," &c.; all aiming to show the capability of inducing, by apparently slight causes, as "mere mechanical contact of metals," a "wonderful inversion" of their properties, and that, "under certain combinations acids lose their power of attacking metals." It further informs us, "that it is not uncommon in making assays, after abstracting one metal, to add others, in order to reach the desired purity,"—("purity," mark the word,)—and how the "laws of affinity" are consulted, "so as to combine the added metal with the one retaining the metal *to be purified*," and how all this is to be done "at a precise temperature or failure results," and what necessity there is for the "greatest accuracy in the use of all re-agents," &c.

We are then told, that "The celebrated Dr. Brandt, long years ago, stated that he thought time would prove 'that in the combination of metals, new metals would be produced of distinct qualities, of as peculiar characters as is found in a simple elementary metal;' in other words," continues the circular, "from alloying to form a *chemical union*, so as its constituents are lost in the development of the one not possessing any relation to them, in fact, a *new metal*, whose chemical and mechanical characters are different from all others."

Thus prepared for the belief that "this cheoplastic metal" may indeed be the realization of all this, we have next the emphatic announcement, that "*the metal is as pure to wear as the gold commonly used for dental purposes.*" All from alloying tin with bismuth, anti-

mony and a little silver, which prove to be its components. Then comes the customary "*caution*" to the profession, "*against the impositions that have and will be practiced upon them*, by men who know nothing about metals or their mechanical qualities;" that "*there is great danger in using impure metals in the mouth*," &c.

To the circular is appended an array of recommendations more than corroborative of all the patentee himself ventures to claim for his metal. And, what is the most astounding feature in the affair, these testimonials are mainly from men who have held the highest rank in our profession, as authors, as teachers, as professional guides, who have hitherto led the rest whithersoever they listed.

But first take the evidence of a professed chemist, Dr. Gideon B. Smith, of Baltimore, who affirms: "Chemically considered, the metal is perfect. No acids that can ever come in contact with it in the mouth, and none of the secretions of the mouth, can have any effect upon it." But it does not appear that Dr. Smith had submitted it to any direct chemical test, except applying to it a current of sulphuretted hydrogen, and leaving it exposed to the common atmosphere of his laboratory, whose gases he says would have blackened pure silver; thus applying the test for *silver* to a compound whose chief component is *tin*, and whose quantum of silver is so small as to be inappreciable by such test. Why did he not submit it to re-agents capable of affecting tin, and then ascertain if any of such re-agents were ever present in the mouth?

Next comes Professor P. H. Austen, of the Baltimore Dental College, whom we have all admired for the utility, beauty, perspicuity and general excellence of his writings. He implies much more than he clearly asserts; refers to his "*favorable opinion*" previously published, and says: "My experience, since writing those communications, confirms me in the views there expressed." But he abstains from speaking directly of the chemical qualities of the metal.

Dr. Charles W. Ballard, of New York City, who, as a writer of spirit, independence and manly candor, has earned honorable fame in the profession, proclaims, that this metal has, among other enumerated advantages, that of "*perfect purity and cleanliness*; equal, in this respect, to Allen's continuous gum work, and superior to every other style of mounting artificial teeth." Did he mean in its property of resisting chemical contaminations, as probably every one would understand; or did he mean merely in the exclusion of substances from lodgment in interstices between plate and teeth? and if the latter, why did he not also instance ordinary tin work as an exception?

Dr. Wm. H. Dwinelle, prominent as a professor in the New York Dental College, who has written extensively on dental subjects, and won the reputation of an able and zealous advocate of almost every new method or process that has been submitted to the profession, backed by respectability, adds the weight of his testimony to this:—"After fully testing it," says he, "I unhesitatingly accord to it the following advantages;" among which he enumerates "Its non-corrosiveness,—being equal to gold or platina in this respect." But he does not inform us of the means he employed in thus "*fully testing*" its virtues.

Dr. Edward Maynard, of Washington City, professor in the Baltimore Dental College, expresses himself "convinced" that "the invention will prove of immense benefit;" but is frugal of words.

To close the list of testimonials, (of which the foregoing constitute the more notable,) we have lastly the high authority of Professor C. A. Harris, (of the Baltimore Dental College,) who has long been held the oracle of the profession. He says he has adopted this method in his practice, and states, as his conviction, from observation and experience, "that it possesses, in a large majority of cases, decided advantages over every other heretofore practiced." This, it will be recollected, comes from one who has ever been foremost and most emphatic in deprecating the employment of base metals for dental purposes, or of any material capable of undergoing oxidation or corrosion in the mouth—particularly amalgam and *tin*. What better testimony could be had to the "purity" and "non-corrosiveness" of this alloy, which he here so strongly recommends, by example and precept, to the use of the profession?

Now from such representations, and accumulation of evidence, might we not feel assured that Professor Blandy, by some peculiar chemical manipulation with tin, had really produced a new metal of very different chemical properties, fitted to stand side by side, or a little in advance of gold and platina? That indeed pure tin, which has been employed for a number of years in the casting of plates, and upon substantially the same method of Dr. Blandy's, but to be found wanting in the "great majority of cases," on account of its susceptibility to corrosion and oxidation in the mouth, and which the best authorities in the profession have concurred to condemn as a material for plugging, on the same grounds, that this tin—in its purest form thus impure—had, by Dr. Blandy's method of "purifying," by addition of other metals, and "alloying to form a *chemical union*," been in fact transformed into a metal "*as pure to wear*," (to say the least of it,) "*as the gold commonly used for dental purposes!*"

But what is the truth? What are the chemical properties of this metal, as revealed by experiment, and what its advantages, or fitness, for dental purposes?

In order to satisfy others, and assure myself, beyond the possibility of mistake, I subjected the metal, upon a recent occasion, to the action of several re-agents, most conveniently at hand; and although I cannot say with Dr. Dwinelle, that I have "*fully* tested it," yet I think it will be sufficient to indicate its impurity in the mouth, its liability to corrosion and inadequacy for dental use in the great majority of cases. The metal was Professor Blandy's "Genuine," bearing his patent stamp, &c.

I will state, in order, the different agents employed, and their effects, as noted down at the time: also upon tin and a few other metals, where they were brought into comparison, since our dental works and chemical text books are not very specific upon this subject. In the three first cases, the acids were purposely much diluted; the reactions corresponded with what is known of tin.

1. Dilute nitric acid: acts with vehemence on the metal, reducing it completely to oxide, which, on evaporation of the acid, is left a greenish-white residuum.

2. Dilute sulphuric acid: blackens it almost immediately; oxidizes very slowly.

3. Dilute hydrochloric (muriatic) acid: blackens and oxidizes the surface more speedily than sulphuric acid. In both these acids, the oxide falls away in black powder.

4. Caustic potass, in a deliquescent state: blackens it immediately, acts with energy and dissolves it into an inky mass. Tin is acted on in the same manner, and with equal facility; bismuth similarly affected, but more slowly; cadmium merely tarnished; no perceptible effect on silver, lead, antimony, iron, copper. Neither sal. soda nor carb. soda in solution has any action on the metal.

5. Solution of nitre, with alum and common salt: tarnishes it slowly; after twelve or fifteen hours, the surface is blackened and eroded. As neither solutions of alum nor salt appear to affect it, this action is doubtless due to the nitre.

6. Tartaric acid, in solution: has no effect upon it; nor upon tin, bismuth, copper; but it tarnishes antimony, iron, cadmium, lead.

7. Lemon juice, (citric acid:) tarnishes it very slowly; at first imperceptible, but after two days, the surface is darkened. It has precisely the same effect on tin..

8. Acetic acid, diluted: after two hours, the metal is slightly tar-

nished ; after two days, considerably darkened ; effect nearly the same as lemon juice ; same action on tin.

9. The same, heated, but not to boiling : action immediate, rendering the metal as black as coal in five minutes ; same effect on tin. (In all the previous cases the fluids were cold.)

10. Oxalic acid, (in solution :) tarnishes it considerably in two hours ; after twelve hours, the surface is of a deep black. Tin *appears* to be less affected. (The oxidation was not facilitated by heating this acid, but the heat was not prolonged.)

Where tin and cheoplastic metals were composed, they were placed in separate vessels, remaining of course the same length of time. But in most of the tests, the time was not particularly noted, though in no case continued over about two days. It would be interesting to apply similar tests for several days or weeks, and then examine by aid of a strong magnifier the depth of oxidation upon the surfaces. In the above I feel satisfied there could have been little difference in amount of oxidation on the two metals, but I think prolonged tests would prove, what theory would indicate, a greater facility and extent of action upon the *alloy* than upon pure tin.

It is needless to remark, that none of these re-agents have any action on platina or gold. All are liable to find their way into the mouth, either introduced with ingesta, or generated by decomposition of particles of food and other matters, or present in the secretions. Chemical analysis has already revealed, in the saliva alone, when in acid conditions, the presence of acetic, lactic, hydrochloric or muriatic, oxalic and uric acids ; the most active of which, (so far as concerns cheoplastic metal,) namely, hydrochloric acid, is generated in cases of ordinary indigestion and simple gastric derangement, from impropriety or excess in diet, to say nothing of its being thrown up in large quantity in eructations from the stomach. Of the saliva, too, recollect its strong affinity for oxygen, which it so readily absorbs from the air, to impart again to other substances, especially metals, and by which they are so liable to oxidation in the mouth.

The disposition of oxygen to unite with decayed particles of food, gives rise to the formation of acids, according to the nature of the substance, whether nitrogenous or non-nitrogenous. Dr. Samuel L. Mitchell, as long ago as 1796, drew attention to this subject in his letters to Dr. Hope, of Edinburgh, wherein he illustrates the formation of septic, or nitric acid in the mouth, by the combination of oxygen with the septon, as he calls it, resulting from the remains of food, (whether animal, or vegetable, containing nitrogen.) "Nitric acid,"

says Professor Graham, in his "Chemistry," "is largely produced by the oxidation of organic matters, during the putrefaction in air, when an alkali or lime is present;" which is precisely the case in the mouth, the saliva in its ordinary state containing, in excess, in alkali and lime. Professor Harris, in his "*Principles and Practice of Dental Surgery*," fifth edition, informs that even gold plate, if alloyed with platina, (which alloy he says, "is readily acted on by nitric acid,") is liable to corrosion by the septic or nitrous acid which is formed in the mouth.

It is unnecessary to enumerate the various acids, alkalies, salts or gases, which, whether from ingesta or secretions, find their common laboratory in the mouth, nor the re-agents which their multiform combinations and reactions are liable to produce, capable of corroding the base metals, especially a compound like this cheoplastic alloy. We have already seen quite enough to invalidate the testimony of any parade of witnesses, however numerous or imposing, who assume to assert that it is "*as pure as the gold commonly used*;" that its "*non-corrosiveness is equal to gold or platina*," and that "*no acids that can ever come in contact with it in the mouth, and none of the secretions of the mouth, can have any effect upon it*."

It is, to say the very best for it, nothing more than tin rendered stiff, harsh and brittle, by the admixture of other metals, without modifying for the better, or disguising any of its chemical properties, or adding thereto a single virtue; and which, instead of "resisting oxidation," as claimed, is acted upon by all of the mineral, and most of the vegetable acids, as well as by alkali and certain salts.

But this is not the worst, for I think it will appear that this vaunted *chemical union* of the other metals with the tin, renders the alloy chemically inferior to pure tin, and consequently more objectionable for dental purposes. Of the adulterations—antimony, bismuth and silver—the latter is certainly of no advantage, unless to *talk about*: and, chemically considered, it is obnoxious, owing to galvanic action and greater liability to oxidation, induced by contact or combination of metals, so different in electrical properties, as silver and tin. It is well known, that if two metals, the one negative, like silver, and the other positive, as tin, in respect to each other, are submitted, in contact, to an acid having an affinity for both or either, galvanic action is brought in play, causing the acid to act with greater energy on the positive, or more oxidable metal, than it otherwise would. So of an alloy,—which is but a *contact of atoms*, presenting a mixture of positive and negative elements,—the difference in electrical conditions of

its components, by inducing galvanic action, increases the affinity of the acid for the positive atoms or particles.

With reference to this augmented susceptibility of alloys to oxidation, in consequence of galvanic agency, there is reason for belief that it is greatest where *several* metals enter into the compound, although the absolute proportion of the metal alloyed remains the same. Thus Dr. James Robinson, (in a paper on the alloys of gold,) records the experiment of submitting three different specimens of 14 karat gold, one alloyed with copper, one with silver, and one with silver and copper, each weighing $24\frac{1}{2}$ grains, to the action of nitric acid; in which the first lost $4\frac{1}{2}$ grains, the second $1\frac{1}{15}$ grains, and the third nearly $8\frac{1}{2}$ grains; whence he concludes, that "gold, alloyed with one metal, is less liable to corrosive action, than an alloy which consists of *three* metals."

This objection to the silver used in Dr. Blandy's metal, is alike applicable to the bismuth and antimony; although, as to bismuth, I do not think it would be of much moment, if unassociated with the silver and antimony, since the electrical differences between the bismuth and tin are so slight as to induce comparatively little electrical excitation. But to antimony there is a graver objection. It is a poisonous metal, nearly allied to arsenic, with which in chemistry it forms a distinct class,—the oxides of each corresponding to those of the other, and both remarkable for forming strong acids with oxygen. The oxide of antimony operates on the system as an irritant poison; it is the active base of tartar emetic. The action of nitric acid converts it into antimonious acid, a strong acid forming various salts with metallic oxides. The salts of antimony afford some of the most active and dangerous preparations in medicine. The powerful effect of tartar emetic in small doses, taken internally, and also on the skin and cellular tissue, as a pustular ointment, is well known. Besides, antimony is rarely free from arsenic, with which it is naturally associated, and so great is their affinity, that the latter finds its way into most of the pharmaceutical preparations of the former. "According to Serullas," says Professor Bache, "all the antimonial preparations, except tartar emetic and butter, or sesquichloride of antimony, contain a minute portion of arsenic." If this is the case, after passing the ordeal of the dispensary, and the transformation into various salts, &c., what are we to expect of the crude metal?

But what effect this antimony, as contained in Dr. Blandy's compound, would have upon the mucous surfaces of the mouth, and with susceptible constitutions, must be left for time to determine. We can

only for the present admonish the profession, in the Doctor's own language, "of the great danger of using impure metals in the mouth,"

* * * "*as the injury will only be discovered when irreparable.*"

As a base for artificial teeth, pure tin has every advantage which can be justly claimed for this alloy, (except perhaps that of stiffness,) and being innocuous in the mouth, however objectionable in other respects, should be preferred to it in this style of work by those who consult consequences. Moreover, if desired, any degree of stiffness and elasticity could be bestowed by a small proportion of bismuth only, of which much less effects the same end than of antimony, without the danger. The surety and facility of obtaining it perfectly pure for the purpose, is also an important consideration.*

From experiments made some months ago, I am convinced that this single metal with tin gives a better flow, a more uniform surface, and is less liable to flaws and shrinkage, without association with antimony or other admixture, than with it. It whitens tin, and gives it a very clean, handsome appearance. It may be used in the proportion of one part bismuth, to from ten to twenty parts of tin, by weight; for ordinary use, say one to twelve, which—to borrow the technicality appropriated to gold—would make the tin over 22 "karats" fine. For *solder*, a larger proportion of bismuth will be required. As block tin is liable to contaminations from lead, antimony, &c., the best *grain tin* should be obtained; or the metals properly refined might be supplied by our dental furnishing houses.

But here let us, once for all, urge the fact that for all permanent work, gold and platina are the only reliable and unexceptionable metals.

If tin, however, is to be used, let it be called "tin;" for, although reduced to a certain standard by bismuth, or any other metal or metals, it is still as much entitled to the appellation as the ordinary gold plate is to that of "gold." Let it then, whenever used, be known by its true name, in and out of the profession, as becomes honorable professional men due in candor and manly dealing towards their patients. For it is better for the dentist to come out frankly at once, than, after evasions and quibbling, have to admit the fact to an intelligent patient, or than to deceive a stupid one. Better for the profession, voluntarily to proclaim the truth to the public, than to have the public discover it for themselves, and therein convict the profession of duplicity.

* "It may be purified from all contaminating metals, by dissolving the bismuth of commerce in dilute nitric acid, precipitating the clear solution by adding water to it, and reducing the white powder thus obtained (sub-nitrate of bismuth) with black flux."—*United States Dispensatory*.

For the Dental News Letter.

THE VULCANITE BASE.

BY C. S. PUTNAM.

MESSRS. EDITORS:—The growing interest manifested among our profession everywhere on the subject of “What is the best material to use as a base for artificial dentures?” is but a sure evidence of the powerful influence which will eventually be given in favor of that kind *best appreciated* for its comfort, neatness and durability by the wearer; and by the dentist, for the unvarying accuracy and completeness of adaptation, as well as the comparative ease and facility with which it is prepared in the laboratory by the skillful operator. The interest has arrived at such a height now, that *facts* in regard to the subject are wanted, not theories and *misrepresentations*.

The present object of the writer is simply to give a short statement of the rise and progress of the Vulcanite Base, up to the present time, and to set forth some facts, obtained from an experience of more than two years of constant use of said material, in a practice of entirely artificial work. Let me say, first, that as to *priority* in its application to artificial dentistry, *that* is wholly creditable to Mr. Charles Good-year, jr., and Mr. F. A. Bevin, neither of whom are dentists. The question as to who “has taken the lead in its development,” is now so well understood, that certainly no controversy is necessary on that point. Something else *is* required, however, for since the appearance of an article in your last number, upon this subject, many questions have been provoked, in regard to statements therein contained; and I, for one, take this opportunity and method of answering them, by giving the *result* of my experience:

1st. It requires but two hours “to vulcanize a case or cases,” instead of “four to five hours.”

2d. The heat at “170 degrees Fahrenheit, continued one and a half hours, and then raised to 180 degrees for one hour, and 190 degrees for another hour,” will have no more effect upon the material than if it were placed in sunshine during that length of time.

3d. Rubber plates, *without the teeth*, will “sink in water,” and it is for some *Savan* to prove hereafter, that the teeth added will make it float. “If it should be necessary to replace broken teeth,” it would *not* “be best to make a new plate.” A case will be in as good condition *after it is repaired*, “as it was before the injury.” Temporary sets are often made over for the permanent, by cutting away a portion of the plate, and adding more material to conform to a new cast, and it *does not* “destroy too much of the life of the rubber to steam it

over." If the case is "not sufficiently hard and tough," it is *not* "better to begin anew," but it should be made hard by additional heat. No piece, sufficiently firm to hold the teeth, can absorb "the saliva of the mouth," nor become "disintegrated." "The time has come" when it can no longer *appear* expedient for any one to speak of the work in a questionable manner; and though "a dentist of high standing" may aver, and give a volume of opinions and theories on a subject upon which he is almost totally ignorant, it would, on the contrary, be quite as ridiculous for me to say that "I was bound to believe the gentleman." Block teeth will "sometimes break in steaming," and often in the process of polishing. If "the muscles are inserted at the very top of the ridge," it is *not* "necessary to use work of greater weight," nor is there any "affinity in hard rubber for the mouth." But there is doubtless a *congeniality* of the material upon the muscles and gums, which none can fully appreciate, without having first worn metallic plates; and if a plate of any material is worn with comfort without the "central cavity," it is truly from its more perfect adaptation, than "fortunate affinity." "A considerable experience and skill" are not required to properly prepare the work, while a boy can "attend to the boiler and heater" after seeing it once done; and the "something" which an apparatus will cost complete for use, (instructions included,) will not exceed \$75.

It is but fair to state, in this connection, that the first apparatus which is now in use for dental purposes, was established in May, 1856. In August, 1856, at the time of the Dental Convention in New York, the proprietor of the second apparatus called to ascertain the success and progress of the work, stating that "he did not wish to incur any expense until he knew that the work could be successfully made." In the fall of that year, he employed the same engineer who made the first apparatus, to fit up a similar one for himself; since which time, it has been generally understood, that he has proved to be remarkably successful in constructing the "hard rubber base."

Many inquiries are still made in regard to the best style of teeth to be set in the vulcanite material. We would simply answer, all descriptions, from a single plain to a rim of continuous gum; or block teeth can, we believe, be more firmly secured, than if set upon any metallic base. The pins of plain and gum teeth should be flattened with plyers, and turned to form something like a head. A variety of such teeth may now be had of one of our dental establishments, designed expressly for the work, possessing every desirable qualification; and nothing now remains in the way of a more general introduction of the

Vulcanite Base, but the obtaining of some satisfactory terms, from those having control of the patent, for *using* the material. It is hoped, however, that all leading members of the profession will join others who are already doing the work, in demanding a fair and liberal arrangement, so that those in the country can have equal privileges and facilities with those in cities.

For the Dental News Letter.

GALVANIC PROCESS.

This seems to be a new application of galvanism, and one that is likely to be of some importance to the dentist. We cannot see how it could be well applied to any other operation in surgery than to extracting teeth. Our attention was first directed to it by Mr. J. B. Francis, dentist, but we gave it no serious consideration, as we regarded it as one of the thousand expedients of the day to attract attention in the newspapers. But we were attached to a sub-committee of the scientific committee of the Franklin Institute, to investigate its claims; under these circumstances, we gave it some attention. The manner of applying it has already been made public. Most persons suppose that there is a shock experienced in applying it, or that it is painful to the tooth; these objections are not correct. We have applied it in many cases, and the pain was considerably less than in the ordinary way, in all except one case. One patient, a lady about twenty-five years of age, had three or four roots extracted, without applying the galvanism, and suffered great pain. We applied the current, and she still suffered severe pain. The teeth were hard to extract. After extracting three teeth, we sent the patient to a dentist who had been very successful in its use, but she suffered as much there as with us; so it is clear, that in this case galvanism, as at present applied, was of no use to that patient; but in every other case it did lessen the pain. Some patients ask, when they observe us leave the mouth, whether we have taken out the tooth or not, as they are not sensible when the tooth left the socket, although they know that we had put the forceps on the tooth, and that an effort at extracting had been made. We sent a great many patients to Dr. Wilkinson and to Dr. Francis, and they all gave a satisfactory report of their success. We sent a small boy to Dr. Wilkinson, and when he returned, he said that it did not "hurt him in the least." A young lady called on us a few days ago to get a set of teeth, who had ten large teeth extracted by Dr. Francis. She said they did not "hurt her" in the least. These teeth

were extracted without lancing the gum. It may do in some cases, but we approve of lancing the gum in extracting teeth.

The great question to be decided is, does this process take away the *terror* of extracting a tooth? the pang of dislodging a tooth from the socket? With us, it is our decided opinion that it does. Although some patients experience some pain, they say they would not be afraid to get another extracted. It is a constant remark, "Well, I would not have another extracted the old way." There is no danger in applying the galvanic current in any case, as in chloroform or ether. Many persons tell us that they tried ether once, but would not try it again. It does not relieve the patient from a dread of a second application. We consider this of more importance than the alleviation of pain. There is another important matter connected with the galvanic process. The patient, no matter how many teeth may have been extracted, does not feel exhausted after the operation, as when the extraction is done without the galvanism, or under the influence of ether or chloroform; it leaves no sequences. We have conducted our experiments against prejudice; but what we have witnessed thus far, we are satisfied with, and would recommend it to the consideration of dentists.

J. D. W.

For the Dental News Letter.

A REMARKABLE CASE OF PALATINE ABSCESS.

Mistaken Diagnosis—Treatment and Cure.

BY JOHN M'CALLA, D. D. S., LANCASTER. PENNA.

In August, 1852, Miss S. W——, of Lycoming County, Pa., came to Lancaster, for the purpose of obtaining advice in relation to an affection of the mouth, under which she had been laboring for upwards of three years. She gave in substance the following history of the case:—

"About five years ago, while at a boarding school in one of our Eastern States, I had occasion to employ the services of a dentist, and was directed by my friends to the most reputable one in the place; he filled several teeth for me, and, as far as I am capable of judging, performed the operation in a creditable manner. Some months after my return to Pennsylvania, I experienced some unpleasant sensations in one of the teeth which had been filled, (right superior central incisor.) The pain was at no time severe, and soon subsided, but was followed by a gradual swelling alongside of the nose, which reached nearly to the eye, and an enlargement on the roof of the mouth, nearly the size of an almond. Becoming alarmed at their long continuance,

a physician was consulted, who pronounced it a tumor, and that while he did not wish to alarm me needlessly, thought it best to inform me at once that the knife was the only remedy. A dentist was next called in; he thought it might have been produced by one of my front teeth, (right superior *lateral* incisor,) which he accordingly extracted. The tooth proved to be perfectly sound and healthy, and its removal in no way benefitted my case, while I felt the deprivation very seriously. Two other physicians were consulted, but all were unanimous in regard to the nature and treatment of the affection. The idea of submitting to so formidable an operation, now began to prey upon my spirits, and seriously to affect my health. In company with my father, I visited a town at some distance, for the purpose of hearing the opinion of a medical gentleman of some considerable celebrity, indulging the hope that something might be discovered which would furnish sufficient grounds for a different practice from that which had been previously suggested; but here, as at home, we were destined to disappointment. The gentleman gravely informed us, that it was a case requiring the skill of the surgeon. And now," she continued, "I have come to Lancaster, for the purpose of submitting to whatever treatment may be necessary."

Upon examination, I found the patient in possession of a beautiful set of teeth, in which were a number of well-inserted fillings. The right superior central incisor had one in each lateral surface; the tooth was a little longer than its neighbor, yet firm, and the color so near natural, as to be easily mistaken for a living tooth. A fistulous opening was found to exist in the gum, above the space left vacant by the removal of the right superior lateral incisor, which the lady informed me had opened shortly after her trouble began, and that matter was constantly dripping from it, but that the flow was greatest whenever she laid upon her right side. The external swelling occupied the right canine fossa, extending from the alveolar processes to the inner canthus of the eye, and was as hard as bone. The almond-shaped appearance in the mouth was situated on the palatine process of the superior maxilla, extending from the median line towards the right side, and was as hard as any other portion of the arch. I introduced a probe into the fistula, and found no impediment to its passage in the direction of the eye, to the extent of an inch and a half. The nature and cause of the trouble was at once revealed; inflammation and suppuration of the pulp of the right central incisor, subsequent to filling the tooth, had given rise to an abscess. The pus, instead of finding its way through the outer wall of the alveolus, as is usual, penetrated between the bony lamina of the superior maxilla, which it distended so as to

present a ridge where a fossa formerly appeared. It then passed along the palatine process, forming a reservoir in the roof of the mouth, and presenting the almond-shaped appearance previously referred to. This was the terminus in that direction, and served as a diverticulum where any superabundance of the secretion was lodged, until carried off by the ordinary discharge per fistula.

It may here be asked how such a state of things could exist, without implicating the maxillary antrum. The best answer to this question will be found upon the examination of a dried specimen of the upper jaw bone, isolated from the other bones of the face. I told the lady to dismiss her fears of the knife; that we had no tumor, but an abscess, to deal with, and that the first step towards cure was the removal of the primary cause, the right central incisor. So much prostrated was she by mental suffering, that this simple operation was deferred until she should feel somewhat recruited. The next day she called and had the tooth removed. I passed a probe through the socket to the same extent as had previously been done through the fistula; and by bending the probe, I could pass it readily into the enlargement on the roof of the mouth. Having previously thrown in a stimulating and astringent wash, I introduced a lock of lint into the alveolus, for the purpose of keeping it pervious, and establishing a larger drain upon the abscess. The patient was directed to make frequent pressure upon the external enlargement, from the eye downwards, and to let me see the case daily. At the end of three weeks, finding no abatement in the discharge, I passed a needle into the fistula, armed with a ligature, and brought it out through the centre of the prominence in the mouth; the ends of the ligature were tied together, to prevent its escape, and the patient instructed to move it back and forth occasionally. This was found to operate well; the sack, or secreting surface, collapsed, and escaped by the fistulous opening; the discharge gradually became less, and at the end of three months, the parts began to assume their natural appearance.

Such was the fear the lady entertained of her former medical advisers, that she requested me to write out the main features of her case with the treatment pursued, so that, should anything unfortuitous occur in regard to it after her return home, she would be able to present my statement to her physician. I heard from her occasionally after her return, and was pleased to learn that her cure was complete, and that subsequently she was enabled to fulfill a promise of marriage, which had been in some degree depending upon the issue of the case.

For the Dental News Letter.

ADHESIVE FOIL.

We did not expect to ever have had occasion to say anything in reference to this property of foil. We expected to let it take its course as well as many other things good in their place; but with some it is the all in all, and like many ultras, we expected to leave it to the test of time to settle many extravagant claims set up for it by its advocates. Each one in his turn, for and against it, has given his own explanation of its peculiar advantages and disadvantages, and the principles upon which each one's opinion was based. About this we cared very little, because each one seemed to be laboring in the dark. But a recent writer, (Dr. Jack,) in the last number of the *Dental News Letter*, attempts to establish his claim for its extraordinary merits upon its entire purity, and that foil not possessing this property is proportionally impure. Now this view is as unsound as it is unjust, because it impugns the honesty of the manufacturer; and the operator who does not use adhesive foil is deceiving his patient. As to the lighter or darker shades of foil from the same manufacturer being a means to judge of the purity or impurity of the two specimens, it depends upon the "doctoring" of the manufacturer, about which we know nothing. It has been a long time since this difference has been noticed between different makers before adhesiveness was regarded as a peculiar merit. We have noticed a degree of difference in this property for a long time, in specimens of gold, as well with the dark as with the light, and we never questioned the difference in the purity of either. We are as anxious to use pure gold as any one in the profession, for our own credit and for the safety of our patients, and when this very startling announcement was made by the author referred to, and the apparent conclusiveness of his deductions, at least to himself, we set about inquiring into the matter. We accordingly addressed notes to some who were eminent in the manufacturing of foil, to ascertain what was the true nature of the case, and the following note from one firm we regard as sufficient:—"There is no difference in the gold we make into foil; it is all equally pure, and that is as pure as it can be made. The adhesive foil and the non-adhesive is refined at the same time and in the same matrass; the one equally as pure as the other." Now speculation is not as safe a ground to rest an opinion upon as a knowledge of the art of manufacturing gold foil. The peculiar merits of this adhesive property of foil, in a practical point of view, we will leave to the wants of the profession, of which doubtless each one is capable of judging.

J. D. WHITE.

PROCEEDINGS OF PENNSYLVANIA ASSOCIATION OF DENTAL SURGEONS.

The regular monthly meeting of the Pennsylvania Association of Dental Surgeons was held Tuesday evening, June 15, 1858. The President being absent, Dr. James M. Harris occupied the chair. Present Drs. Buckingham, McCurdy, Githens, Garrettson, McQuillen, Gorgas, Pierce, Calais, Woodnutt and Barker.

Dr. J. L. Suesserott, of Chambersburg, having been appointed at a previous meeting to prepare a communication, an essay from him on hemorrhagic diathesis was now read. On motion, a copy was requested for publication. After which, the subject was discussed by those present.

The Hemorrhagic Diathesis.—In the hemorrhagic diathesis, the blood contains a less proportion, both of fibrine and red corpuscles, than in health; consequently, it is deficient in the power of coagulation, producing also a predisposition to congestion of the capillary vessels.

Although the blood may be primarily at fault, it is not the sole cause of the peculiar tendency to hemorrhage, for the capillary and arterial tubes are no doubt wanting in their healthy properties; their coats, by loss of contractility, being often reduced to half their thickness,—vital cohesion of the extreme vessels and tissues in which they ramify, being almost wanting, because of impaired power or tone in the organic nerves. Therefore we can see that it is almost impossible for the blood to assume a solid form, being sent through dilated and non-contractile tubes, in greater volume and much more fluid than in health. These vessels are thin and weak, and consequently easily lacerated, as is evidenced by the serious ecchymosis often produced by a slight bruise. A simple scratch will produce fearful hemorrhage; a sneeze bring on epistaxis; an ordinary cough may induce hæmoptysis; and from slight causes, extravasation within internal cavities, is not unfrequently produced; the extraction of a tooth is often attended with alarming, and sometimes fatal hemorrhage; blistered surfaces sometimes bleed profusely. Individuals thus affected do not appear to have the same liability at all times; for causes which are sufficient to produce free hemorrhage on one occasion, appear to be nugatory on another. The escape of red blood from the vessels generally takes place upon those surfaces most engaged in exhalation and secretion, and in those structures which, owing to their natural laxity, furnish a slight support to the arterial tubes supplying them. Sometimes the exudation is confined entirely to the mucous membrane, cases having occurred in which there was a remarkable tendency to hemorrhage

from every part that possessed a mucous surface or lining; at other times, the cutaneous surface, or only certain and extensive parts of it, are the ones from which the blood exudes.

Yet extravasation will not take place, as already remarked, during a healthy state of the part, or when its vital cohesion is undiminished. It generally supervenes in consequence of certain lesions of the action and organization of the vascular and capillary systems, or of the tissues which they supply, or of both together. While, therefore, we admit that a change in the chemical constitution of the blood *may* be the potent first cause in the production of the hemorrhagic diathesis, yet we do not believe that any return of the blood to a natural standard, can restore vessels and their extreme ramifications; the coats of which have been so exceedingly attenuated and reduced from their normal condition, being not only thin, but weak and easily lacerated.

The peculiar affection to which the term hemorrhagic diathesis has been applied, is hereditary in a striking degree; though, as an almost universal rule, only males are affected by it, to whom it is frequently transmitted by the mother, who is free from its influence. In some families, in the west of Germany and the Rhenish provinces, scarcely a single male arrives at maturity from this cause; and the individual thus diseased receives the significant name of *Bluter*, or Bleeder. A very marked peculiarity of this affection is, that it will sometimes pass over one or two generations, without affecting a single individual, and will again make its appearance in its most aggravated form. From the fact of its being almost entirely confined to the male sex, it will be seen, that the obstetrician has little to fear from its influence; but that it is a serious matter to the surgeon and surgeon dentist, and that the entire science of medicine can exert very little influence upon it, will be evident to all.

As it is not the province of this paper to enter into a detail of the treatment which has been used, and which should be used, in this disease, I do not think I can add anything more interesting than a report of cases as we find them recorded.

“Dr. Riecken, a German physician, has given an account of a very remarkable hereditary transmission of the *hemorrhæal diathesis* through several individuals in a family. The father of this family, Ernest P——, was a husbandman and joiner, who had always enjoyed good health, and at the time of the publication of Dr. Riecken’s work, was in his eighty-sixth year. His second wife, by whom he had the children to be mentioned presently, was of delicate health. In her thirtieth year, she was attacked with rheumatic gout, and after this ceased, with curvature of the spine, asthmatic complaints, and frequent pain

under the breast bone. By and by signs of water in the chest came on, general dropsy followed, and she died of that disease in her sixty-sixth year. Neither the wife nor the husband was ever subject to hemorrhage or to petechial spots. This couple had twelve children—five sons and seven daughters, of whom four died of small-pox, one of eclampsia, and the three boys and one girl of hemorrhage.

“William Louis, one of the three boys, enjoyed good health till his fourth year, when he was attacked with bleeding from the left nostril, which continued, with occasional intermissions, for eight days, and was only arrested by stopping up both nostrils firmly with the *boletus ignarius* (zundschwamm.) Two days afterwards, he was seized with anxiety, and a sense of constriction in the præcordia, attended by swelling and tenderness there, then with cold sweating and deadly paleness, and then with vomiting of black fluid blood, which repeatedly returned, and proved fatal in the course of a week.

“In another of the boys, John Christian William, blue spots, unattended with pain, frequently broke out on the skin, between the first and eleventh year, but were not accompanied by hemorrhage. In his tenth year, he was attacked with violent rending pains in the extremities, more especially in the limbs, which abated in a month-and-a-half, after a hard tumor formed on the left knee. This tumor had been present for a year-and-a-half, when he was suddenly seized with violent toothache in the foremost grinder of the left side of the lower jaw, and the pain was so excruciating, that he consented to the extraction of the tooth; the tooth was quite healthy. A gush of fluid blood immediately took place from the cavity, and nothing could check it. The poor boy gradually became blanched, like wax, and expired on the eighth day.

“Philip Henry, the third boy, presented the appearance of blue spots on the skin, particularly of the buttocks, even during the first year of his life, yet without any signs of weakness. When a year-and-a-quarter old, he died while vomiting fluid blood, which had began the day before, without any previous appearance of ill health.

“The daughter died four days after birth in consequence of hemorrhage after the division of the frænum of the tongue. The same striking constitutional infirmity likewise appeared among the grandchildren of Ernest P., born of his youngest daughter, Louisa Catharine. This woman, who is still alive, and in the 23d year of her age, is short in stature, and light haired, has grey eyes, and a delicate fair complexion. She never had purple spots, nor exhibited any tendency to hemorrhage; nay, wounds, and even apertures in veins, made by the operation of blood-letting, healed in the usual manner. The menses commenced in her thirteenth year, and were usually rather abundant, and of eight days continuance. She suffered much from toothache; and neuralgic affections of the extremities was, indeed, seldom altogether free of wandering pains; and, in her pregnancies, was so much affected by a tendency to plethora, that it was frequently necessary to withdraw blood. The blood coagulated more slowly than usual, was very dark, contained much serum, and presented a thin buffy coat. The hemorrhage, immediately after delivery, as well as the lochial discharge, was always profuse. Her husband is a stout,

healthy man. They have had six children—four boys and two girls, of whom only the eldest girl and youngest boy are now alive. The other daughter died of convulsions, when nine months old, and the three boys of hemorrhage. The surviving girl is very healthy, and never had either blue spots or bleedings. The four boys were all born easily, and the navel healed up without hemorrhage. They all had disproportionately large heads, with unusually loose sutures, and fontanelles of uncommon size, and slow in filling up. Their bodies were delicately and regularly formed; the nails were of the natural appearance; the skin fair and delicate, with the veins shining distinctly through, and the countenance pale, sickly and bloated. They had all blue eyes, and one of them fair, but the three others black hair. Dentition went on in all in the usual manner. They were very lively, of mild dispositions, and the eldest showed much cleverness. The operation of vaccination, which was performed by incisions, was not followed by any untoward effects. All had from birth a very foetid discharge of white, flaky, puriform mucus from each ear. The eldest of these boys manifested a distinct tendency to hemorrhage in the seventh month; dark, irregular spots appeared on various parts of the skin, varying in size from that of an *acht groschen* piece to that of half a man's hand, and without any external injury; and these were at first pale red, but as they increased in size, rapidly became bluish black, and then reddish blue, bluish green, and dirty yellow as they were disappearing. At times, the body was entirely covered with them; they were attended with hardness and swelling, but not with pain.

“The first attack of hemorrhage occurred in the first year, in consequence of his having bitten his tongue, and it was not arrested till various artificial means had been tried in vain, and nature accomplished it after the child was reduced to the lowest possible state of exhaustion. When he was eighteen months old, a second attack took place, in the form of epistaxis, which was not checked till he was almost at the point of death, when it ceased, under the use of the acid elixir of Haller and laudanum, and during the deep sleep which supervened. On his awakening, general convulsions attacked him; then deep sleep returned, and after this, he awoke refreshed and soon recovered. From this period till he was four years and a half old, he had regularly every three months an attack of epistaxis from the left nostril, which continued between four and ten days, with occasional intermissions, and was preceded by lancinating headache, sounding in the ears, excitement of the pulse, flushing of the face, and lividity of the lobes of the ears. The blood was dark red, thin, without tendency to coagulation, and towards the close of the paroxysm, pale, dirty red in color. The hemorrhage never ceased till the child, after repeated fainting fits, was brought almost to the point of death. In his fourth year, he complained much of shifting pains, particularly in the left thigh, which were particularly troublesome before the customary bleedings, or any change of weather, but became much less so on a swelling of the knee-joint making its appearance. The swelling confined him for some time to bed, but it was diminished by proper remedies; upon which, a fresh attack of hemorrhage occurred, and after this, the pains ceased. The child, however, was pale and exhausted, and in two days he died with

all the symptoms of inflammation of the bowels. Sulphate of soda had no effect in checking the hemorrhage in this case.

“In the second boy, the blue spots began to appear fourteen weeks after birth. When ten months old, a furuncle formed in the right arm-pit, which was carefully opened. At first, pus alone issued, but afterwards, violent hemorrhage ensued, which continued for three days, notwithstanding the constant use of tents and compresses dipped in alum. After the lapse of nearly three-quarters of a year, an almost fatal hemorrhage followed a trifling injury of the frœnum of the lower lip, and this was not checked till, on the third day, the actual cautery was resorted to. After this, with the exception of the blue spots, the child was healthy, and became plump and strong. But when two years and a half old, plethoric symptoms began to show themselves, as in his elder brother's case, and he was attacked with pleuro-peripneumony. Dr. Riecken avoided all evacuations of the blood, and brought him through his illness by other antiphlogistic remedies. Suddenly, however, after a return of fever, copious bleeding took place from both nostrils; for which all the usual means, including Glauber's salt, were in vain put in requisition; and it was not until the child had repeatedly fainted, and was pale as a corpse, and till the blood had in the end flowed for six hours as pale as bloody serum, that the hemorrhage ceased spontaneously. Half a year afterwards, he was attacked by flying pains in the extremities, followed by swelling in the left ankle, and when this disappeared, by swelling in the left knee. Recovery, however, was gradually so far accomplished, that the child could walk again, when, in an accidental fall, a small wound, not larger than a pin's head, was inflicted on the point of the tongue. Profuse hemorrhage commenced, and for five days it continued, although every conceivable remedy was tried, including three applications of the cauterizing iron, till at length the breathing and pulse ceased, the skin became icy cold, the eyes lost their lustre, and death was believed to be at hand. After a time, signs of animation appeared; the hemorrhage was found to have ceased, and the child became convalescent. In fourteen days, he began to complain of occasional stitches under the ribs of the left side, accompanied with dry cough; and during a fit of coughing, blood began to gush from both nostrils; the blood was fluid, thin, brownish in color, and foetid; it continued to flow in spite of every remedy which could be thought of, and the little patient soon died, slightly convulsed.

“The third boy, in consequence of the frœnum of the tongue being unskillfully divided, was attacked, when three months old, with profuse hemorrhage, which lasted for three days, and only yielded after repeated applications of the actual cautery. The blue spots did not begin to show themselves till the sixth month. The plethoric symptoms observed in the former cases, appeared also in the present instance about the thirteenth month, and especially some weeks before his death, which took place after an attack of hemorrhage of two days' continuance, occasioned by an injury of the tip of the tongue with an incisor tooth. On this last occasion, repeated cauterization was of no use.

“In the youngest boy, who is still alive, a chronic, itchy eruption on the face was added to the discharge from the ear, which he had in

common with his brothers. Blue spots began to appear on the skin four months after birth; but, subsequently to the administration of ass-colt-liver-oil (!) to the mother, both the eruption and the livid spots disappeared. Whenever the mother intermitted the oil, the spots reappeared; and whenever she resumed it, the discharge from the child's ear dried up, the spots ceased to form, and on one occasion, he sustained a wound of the ring-finger with a sharp knife; yet the hemorrhage was not greater than in other children. Subsequently, a furuncle on the shoulder was opened, and a second time a wound accidentally inflicted, without any particular hemorrhage. The further history of the case is not given. Besides the mother of this family, Ernest P. had two daughters who, together with their families, never suffered from hemorrhage or ecchymosis, but they were very liable to gout, rheumatism, chronic abscesses and eruptions."—*Pattison's Regist. and Libr.*, pp. 105, 106, 107.

I am indebted to my friend, Dr. Wm. H. Boyel, of Chambersburg, for the history of the following case:—

"J. K——, aged about 19 years, was attacked on the 3d of January, 1847, with symptoms resembling those of inflammatory rheumatism. His appearance was that of a healthy young man of a plethoric habit of body. I found him suffering with excessive pain through his system generally, with considerable redness and tumefaction of both knee-joints; pulse full and frequent, with unusual excitement about the whole circulatory system. Proposed venesection, but was informed by the relations of the patient, that that remedy was out of the question, as it would be impossible to arrest the bleeding from the orifice made by the lancet, he having on several occasions nearly lost his life by bleedings from very slight wounds. Prescribed the usual remedies for the rheumatic disease, together with pretty active depletory medicines, to reduce the excited condition of the circulation. This course of treatment was pursued for eight or ten days, without any apparent improvement. The inflammatory action about the joints went on increasing, until desquamation of the cuticle took place, when the blood commenced flowing from the abraded surface. This, at first, was rather encouraging, with the hope that the inflammatory action would subside with the reduction of the circulation. The hope, however, was fallacious, and all our efforts were demanded to oppose exhaustion from the loss of blood, which now flowed in incessant streams from several points. The whole field of "styptics" and "astringents" was fully explored, without any means of relief being discovered. The blood had lost all power of coagulation, and would penetrate through every compress or bandage our ingenuity could devise. The bleeding was not confined to the external surface of the body; nose, mouth and anus also discharged it freely. Failing in all our efforts to arrest the bleeding, our patient died from exhaustion on the 17th of the month. No autopsy of the body, or microscopical examination of the blood was made."

It is somewhat remarkable, that in all or nearly all persons effected by this disease, we can discover a scrofulous, rheumatic or gouty taint; but we dare not for a moment suppose that either one of these affec-

tions, or all combined, could be the exciting cause, otherwise it ought to be much more frequently met with."

Dr. McQuillen.—This subject is one of great importance to the dental profession, as not only alarming hemorrhages frequently follow the extraction of teeth, but fatal cases have been recorded. It is therefore highly necessary that the dentist should be perfectly acquainted with the characteristics of normal blood, the peculiarities of the hemorrhagic diathesis, and so perfectly conversant with the remedies had recourse to, in cases of hemorrhage, that he may be prepared for every emergency. The peculiar features of this diathesis are, a tendency to bleeding, or ecchymosis from the slightest cause—the hereditary transmission, principally, though not solely, on the male side—a deficiency of the solid constituents of the blood—the fibrine and red corpuscles not being present in due proportion, thus inducing a defective power of coagulation—and an absence of contractility on the part of the capillaries and arterial twigs. In the latter, the middle or muscular coat being very thin, the vessels instead of contracting and retracting, and by that means reducing their calibre, remain open and dilated, pouring forth their contents freely. In managing a case of hemorrhage, the practitioner should bear in remembrance that, whilst lying in a horizontal posture, the patient may lose an amount of blood which he can ill-afford to spare, without giving other evidence than the blood by his side. Except in cases of flooding, the patient, therefore, should be placed nearly in a sitting posture. This may induce a slight faintness, or perfect syncope, during which, the force of the heart will be modified, and the hemorrhage retarded or completely arrested. Another indication is, to remove the coagulum that may have formed, so that the styptics, astringents, compresses, and other remedial agencies may be brought to bear directly upon the bleeding surface. Several cases of severe hemorrhage have occurred in my practice. The most interesting one that I can recall at present, happened in a near relative, Miss S—; æt. 60, who is of a hemorrhagic diathesis, having on different occasions, from very slight causes, sustained a considerable loss of blood; much difficulty attended the efforts to arrest the hemorrhage at each occurrence. About eight years ago, I found it necessary to extract the right superior dens sapientiæ. The tooth was much decayed, and quite loose; with very little effort it was removed; a free hemorrhage followed, but not of a serious character. Saw the patient a few hours after the operation, and found that a slight flow of blood still continued, but she was not inconvenienced by it. On returning to the house late in the evening, however, I was informed, that

directly after my departure, the hemorrhage had become quite severe and continued so long, that she had lost a great deal of blood. On entering the chamber, I found her lying in bed, with her head very low; much alarmed; quite exhausted, and decided evidences of the loss she had sustained around her. As near as practicable, the latter were removed; then by the aid of pillows, she was placed in a sitting posture; the change of position was attended by slight faintness. On examining the mouth, a coagulum of some size was found protruding from the alveolus; this was thoroughly removed. A sufficient quantity of lint was then mixed with pulverized rosin, and tightly packed in the alveolus; a piece of muslin, which had been folded, was placed between this and the lower molars, as a compress. The mouth being closed, a bandage, passing under the jaw and over the top of the head, was tightly secured. The flow of blood was immediately checked, and no return took place; but she was several days recovering from the exhaustion, consequent upon the loss sustained.

Dr. Harris.—The non-contractile character of the blood-vessels, which is so striking a peculiarity in the hemorrhagic diathesis, is no doubt due in a great measure to a want of proper action, on the part of the organic nerves; for the minute distribution of the sympathetic nerves upon the walls of the arteries, renders it highly probable, that the contractility of these vessels depends very much upon the state of the nervous centres. The deficiency of nerve force, and the thinness of the middle coat of the arterial twigs, added to the impoverished condition of the blood in this diathesis, frequently renders the treatment of a case of hemorrhage a difficult matter. As has already been stated, regard it as an important point, that the coagulum should be displaced, so that the remedies may act directly upon the bleeding surface. Have found *coarsely* pulverized alum a very useful styptic. If reduced too fine, it is apt to be washed away with the blood, without inducing an astringent effect. Some years ago, I was very much interested in a case that came under Dr. Townsend's care, when, in extracting a tooth, a large portion of the alveolus was removed, and a profuse hemorrhage supervened immediately. From its jetting character, there was no mistaking its source; several ineffectual attempts were made to ligate the vessel. Failing in this, the actual cautery was applied, and the hemorrhage checked.

Dr. Calais.—Being a student in dentistry, I have no experience to offer in that direction. I remember, however, to have seen, when a student of medicine in Goattengen, a boy who was a "blutter," or bleeder, that had a large extravasation of the knee-joint, occasioned by

a slight push. Heyfelder relates that the inoculation of cow-pox occasioned in one case a profuse hemorrhage. Wachsmuth speaks of a case in which a young lady bled to death on the wedding-night, in consequence of hemorrhage occasioned by bursting the hymen. I heard of a case quoted by Professor Chelius, in his lectures on surgery, where death followed subcutaneous bleeding, in a boy who had a slight fall. Redman Cox relates a case, in which the blood issued without any injury, out of the nose, the ears, and posterior part of the head. Some time later, the blood also flowed from the shoulders, the abdomen, the points of the fingers and toes.

Dr. Buckingham.—The only case I will relate at present was one not arising from a hemorrhagic diathesis, but from the rupture of a small artery in extracting a tooth.

Mrs. McC. called on me about two years ago, to have some artificial teeth inserted. I found it necessary to extract several teeth, one of which was the first right superior molar. This tooth stood alone. The alveoli around it was very prominent, whilst it had been absorbed very much anteriorly and posteriorly. I lanced the gum freely, and in extracting the tooth brought away a portion of the external plate of the process. The patient almost immediately complained of the hemorrhage; took no notice of it for a moment or so, but finding it did not diminish, asked her to let me see it. When on raising the flap of the gum found the arterial blood jetting out at every action of the heart. I immediately made a small pledget of cotton as near the size of the roots of the tooth as I could judge, saturated this with spirit varnish, and placed it in the cavity. The hemorrhage stopped almost immediately.

I mention this case to show that we always have the means at hand to stop ordinary cases of hemorrhage. There is scarcely anything better for this purpose than some of the gums dissolved in alcohol, not on account of their possessing any very astringent properties, but from the facility with which a piece of loose cotton or lint, saturated with such tinctures, can be made to take the shape of the cavity. The blood in a very short time removes all the alcohol, leaving the cotton and gum in a solid mass, which, if held there by a compress, must effectually stop the bleeding. There may be cases resulting from a hemorrhagic diathesis where constitutional treatment would be necessary, but I have not met with these in my practice; have had a great number of cases where the hemorrhage has continued for some length of time, but have always been able to arrest it with a compress.

Geo. F. Barker.—I extracted for Miss L. the second and third molars

of the right side, upper jaw. They were much decayed, and upon both there was a deposition of salivary calculi, but more particularly upon the second molar. The teeth were not large, and were easily extracted with a forcep used for extracting incisor roots. Immediately after their removal, the flow of blood was slight, and it was not until an hour after that severe hemorrhage commenced, while crossing the ferry to New York. As soon as possible, I washed out the mouth and found that the hemorrhage proceeded from the alveolus which the second molar occupied. Placed in the cavity a pledget of cotton, tightly wedged, replacing it through the day, but without success, and it was not until late in the evening, after washing out the alveolus with ice water, and directing her to hold small pieces of ice in the mouth, that I succeeded in arresting the hemorrhage, (also applying the cotton as before.)

The question presented to my mind in this case was, Why should hemorrhage follow the extraction of the second molar alone? Had she been of the hemorrhagic diathesis, both would have been involved. I can only account for it by supposing that the deposition of tartar had induced a relaxed condition of the parts, and so far involved the coats of the vessels as to deprive them of their contractility.

Dr. Pierce.—I have derived much pleasure and profit from Dr. B.'s communication on hemorrhagic diathesis. Have met with several cases of hemorrhage that are liable to fall into the hands of a dental practitioner.

The first was a Mr. —, for whom I extracted two superior molar teeth. There was not more bleeding than usual at the time, but some hours afterwards the flow of blood became excessive, and from its loss he became much weakened. On being sent for, I immediately turned out the clot, and with my syringe rinsed out the alveoli from which the teeth had been removed, with cold water, then filled up the sockets with cotton and tanin, and folded a small napkin four double, placed it over the cotton, directed the patient to bring his jaws together, which I held firm by tying a handkerchief under the chin, and desired him to let it remain so for ten or twelve hours; but being somewhat annoyed with it, in two hours he removed the compress, when the blood soon commenced flowing as freely as before. Being sent for again, the same course was pursued, after which my directions were obeyed and no further difficulty supervened. The second case was a gentleman for whom a superior second molar had been extracted. I was not called upon until the patient, from weakness, was confined to his room. This person was subject to frequent hemorrhages from

the lungs. The same course in applying the compress was pursued as in the case previously described, with equal success. Though I have had no case of hemorrhage from the gums by exhalation, immediately under my care, I have known of two or three in the hands of a physician of my acquaintance, which were successfully treated by washing the gums with a strong solution of alum and tanin. And in one case he told me he had used spirits of turpentine; ten drops on a lump of sugar dissolved in the mouth. The latter remedy I have great confidence in, from the efficient service it has rendered in arresting hemorrhages from the lungs where there has not only been exuding of the blood through the mucous membrane of the air passages, but actual rupture of the vessels.

Dr. McCurdy.—As you may readily imagine, I have no experience to offer in relation to hemorrhage from the extraction of teeth, either in those of a hemorrhagic diathesis, or those that are exempt. My object in rising is to relate a case that may not be uninteresting, which occurred with a friend, who is evidently of the hemorrhagic diathesis; as, in his younger days particularly, he was frequently subject to bleeding from the nose of an alarming character, which it was quite difficult to arrest. The ordinary remedies failing to check the hemorrhage, by means of a quill, powdered gum acacia was blown through the anterior ~~nasus~~, and coming in contact with the bleeding surface, the flow of blood was effectually arrested. This was tried on several occasions with equal success.

For the Dental News Letter.

SWELLING OF THE GLANDS BY PRESSURE FROM A PLATE.

EDITORS DENTAL NEWS LETTER:—In my short practice here, several things have presented themselves for thoughtful consideration, which to me were really new, not having seen in all my previous preparation for duty, or in my reading since that time. One case I will give for publication, if you deem it worthy, which is most particularly connected with our profession, and if received favorably by you, I will again contribute my mite.

Mrs. C——, aged about forty-five, in health equal to most females, came to me, about one year ago, to have placed in her mouth a full set of teeth on gold plate, excepting four incisors, inferior, which she would not have extracted. The mouth had been prepared some eighteen months previous, and was in a very healthy condition at the time an impression was taken. The process, in both the superior and inferior jaws, were very much absorbed; the superior being very flat,

and the inferior so much so, that it was on a level with the loose membrane under the tongue; in fact, there was no process at all.

I made, and placed them in her mouth to her satisfaction. After she had become used to them, and the first trial at mastication, she found that the external parts just under the tongue began to enlarge, and by the time she had finished her meal, the parts had nearly met, having commenced upon either or rather both sides of the tongue. This was the case at every attempt to make use of them in chewing. She became alarmed, and, for fear it would soon fix itself permanently, hastened to inform me, first seeing her physician, who was inclined to think it resulted from a closure of the mouths of the submaxillary glands, by calculous deposit just at the mouths of the ducts, and proposed using caustic, as a matter of course. The doctor informed me of it before I saw Mrs. C——, and his idea thereon. I at once took grounds against him; from the fact that the accumulation was only when in the act of mastication, and as soon as this was performed, the parts swollen subsided as gradually as in coming on—in a few minutes—for 'tis at this particular time that the glands are most stimulated, and consequently throw out, or rather secrete, most saliva. This was my principal objection, without first seeing the case myself. At that time, my reason to him was, that on account of the unusual absorption of the alveolar process, of which I was previously aware, had allowed the inferior plate to cover the mouths of the submaxillary ducts, which lie upon either side of the tongue, and open immediately under the plate, preventing the saliva from passing out. After examination, my views proved correct; and what made the plate more liable to cause this was, that the teeth were placed in, not only by atmospheric pressure, but by springs, to assist her in becoming habituated to them. As the roof was very flat, and in alternate places the membrane was very soft, leaving points of the hardened process, upon which the plate could rest. Add to this, the remaining incisors (four) were a great stay, making the lower plate less liable to stir from its place in chewing, although they were not clasped, (which thing I never do,) thereby the more tending to keep the plate from raising.

When she visited me, my views before stated proved correct. To remedy this, (and what could more simply have been done,) I took off from the inner side of the inferior plate, just along where the duct opens into the mouth, about the eighth of an inch. This was all that was required, to give free egress to the natural accumulation of saliva, at every act of mastication. Success, of course, could but naturally

follow so unsophisticated an act, without the surgeon's knife or cautery, one of which means he was about to use, had I not been consulted previously to his treatment; to which, by the by, he willingly condescended, being my friend and that of the profession to which I have the honor to belong.

I merely state this case, as it is no doubt novel to most of my calling, as well as to those of the medical world; for I have never seen or read of its like from the same cause, neither had my friend, the doctor. You here have an instance where dental surgery has been of undoubted use, in connection with medical practice, in a case that might have given a vast deal of pain and trouble to both patient and physician. I wish this to be taken as from one who does not claim novelty or display or otherwise, as a writer; but what is said may be of use practically to some one of my co-laborers in the common cause of humanity. This accomplished, I ask no more than "go thou and do likewise."

Yours,

WM. G. A. BONWILL.

Dover, Del., June 12th, 1858.

 For the Dental News Letter.

ALUMNI PENNSYLVANIA COLLEGE DENTAL SURGERY.

An adjourned meeting of the Alumni of the Pennsylvania College of Dental Surgery, was held at the office of Dr. T. W. Walker, on Tuesday evening, May 4th, 1858. The Committee on Constitution submitted a draft of a Constitution and By-Laws, which, after being slightly amended, was unanimously adopted. The following officers were then elected, according to the provisions of the Constitution:—President, Dr. T. W. Walker; Vice-President, Dr. John R. Lewis; Secretary, Dr. J. Greeley Ellison; Treasurer, Dr. Charles Woodnutt; Librarian, Dr. Henry Winterbottom.

Drs. Woodnutt, Walker and Ellison were appointed a committee to confer with any committee which may be appointed by the Alumni of the Philadelphia College of Dental Surgery, in reference to a union of the two Alumni in one Association, it being understood that the Alumni of the Philadelphia contemplate appointing a committee for that purpose at their next meeting.

Dr. John R. Lewis, of Buffalo, New York, was appointed to write an essay on some subject connected with the theory or practice of dental surgery, to be read at the next meeting of the association; and the Secretary was directed to notify Dr. Lewis of his appointment. The next meeting of the Association was appointed to be held in the College building, at 4 o'clock in the afternoon of next commencement day. Adjourned.

J. GREELEY ELLISON, Secretary.

For the Dental News Letter.

CARIES ARRESTED BY CONSOLIDATION OF THE DENTINAL TUBULI.

BY J. H. M'QUILLEN.

[CONTINUED FROM PAGE 181.]

Satisfied that the alteration of structure, described in the previous part of this communication, is an eminently reparative process, it becomes an interesting subject of investigation, to ascertain whether, by proper dietetic, or remedial agencies, this most desirable change can be promoted or assisted; for it is a well-attested fact, that, notwithstanding the most careful manipulation, on the part of *experienced* and *skillful* operators, there are teeth which the dental practitioner is called upon to treat, in which he has little or no prospect of success attending his operations, unless a favorable change occurs in the general system of the patient, and contemporaneously with it, in the oral secretions, and the nutrition of the dentine.

This proclivity to decay is frequently due to an original defect in the organization of the teeth, which are characterised, both actually and relatively, by a deficiency of the phosphate of lime; the dentine unaffected by decay, being found (after the removal of all the carious portion) so soft, that with the excavator, it can be cut away with the greatest facility—the tissue feeling under the instrument as if composed of carbonate of lime, or dense animal matter. Coincident with this condition of the dental organs, there is generally a decided cachexy of the system, in some cases identical with the strumous. Occasionally, this state is confined to a definite period in the existence of the patient, generally prior to, or during adolescence; after that, a decided improvement occurs in the general health, and the teeth assume a more durable and perfect structure. Unfortunately, in the majority of cases, a subsidence of the cachetic condition either does not occur, or takes place at so late a period, that the teeth become irreparably affected by decay.

The appearance presented by these teeth, suggests the possibility, that their condition is frequently, if not invariably, coincident with the existence of rickets. In this affection, there is an original vice of the osseous tissue peculiar to childhood; there is a deficiency of the phosphate of lime; the bones are soft and pliant, and can, in extreme cases, be readily cut with a knife.* From the inception of the disease,

* A dried scapula, softened by rickets, analyzed by Dr. Ragsky, contained—
 Cartilage vessels, fat, - - - - - 81.12 organic matter.
 Basal phos. of lime and phos. of magnesia, 15.60 }
 Carbonate of lime, - - - - - 2.66 } 18.88 inorganic matter.
 Salts soluble in water, - - - - - 0.62

it is accompanied by a marked cachexy. Generally, the cachectic condition becomes modified, and the diseased state of the bones disappear, leaving, however, frequently a permanent deformity.

Other cases again are presented to the dentist, in which the original conformation of the teeth was perfect, and as long as their possessor remained in the enjoyment of health, were but slightly if at all inclined to decay; but on the establishment of certain diseases, in which the powers of the system are seriously impaired, or, as with females, frequently after parturition, the teeth soften and crumble away in a rapid manner. The dentine, instead of presenting to the excavator the dense, hard and unyielding structure, which characterized its normal condition, becomes so changed in consistence, that it yields as readily before the instrument as chalk, or cartilage would. This alteration of structure is, according to my observation, usually confined to females, though it occasionally occurs in males, just prior to maturity.

The phenomena manifested in these teeth, present features that are quite analagous to mollities ossium, or the osteomælacia of Rokitansky; an affection of the bones that belongs to maturer years than rickets; it is more frequent with females than males, and several times has been met with after child-bed. The skeleton, originally perfect in composition, parts with its earthly constituents, and becomes soft and pliant; this change takes place in a rapid manner, and is accompanied by a preternatural excretion of the phosphate of lime with the urine. "In a case recorded by Mr. Solly, the urine contained between three and four times the amount of phosphate of lime that belongs to it in health."* The diseased condition of the bones is preceded and accompanied by serious constitutional derangement.

I direct attention to these analagous features, from a conviction that the same causes—depressed constitutional power, perverted nutrition, superabundance of acid in the system, etc.—which induce the diseased condition in the osseous tissue, also operates against the integrity of the dental organs. At the same time, I wish to be understood as presenting them *suggestively*, rather than as *incontrovertible* positions. If, by future investigations, they should be found correct, it is not improbable that the pathologist, with the aid of the microscope and chemical analysis, may be able to make the teeth an index, which, along with the phosphatic deposit in the urine, will materially assist him in forming his diagnosis of the state of the osseous system. And if, as is reasonable to be supposed, the teeth should be the first affected, it is possible that mollities ossium, which is regarded as an incurable

* Stanley on the Bones, p. 191.

disease, may be detected in its incipient stage, and yield to proper regimen.

The province of this paper warranting only a passing glance at the diseased state of the bones, it is proper, at this point, to consider the causes that induce the peculiar conditions presented in the teeth described, and the remedial indications suggested. In each class presented, there is a deficiency actually and relatively of the phosphate of lime; in the first, due to an insufficient deposit originally, and in the second, owing to the removal of that which had been deposited.

Depressed constitutional power, whether the result of hereditary transmission, fevers of a low type, parturition, or other cause, has, as an invariable accompaniment, a complete derangement of the digestive organs. Under these circumstances, the function of nutrition, which is not only dependent upon a due supply of pure and well-elaborated blood, but also a normal condition of the part to be nourished, becomes perverted. Coincident with imperfect digestion in some constitutions, there is a diminution, and in others a superabundance of acid formed in the system; when the latter is the case, to a marked extent, it is calculated to deprive the organism of a large share of calcareous matter. In such systems, as long as digestion is ill-performed, an indulgence in amylaceous food, or those articles of diet that contain starch, sugar, etc., is followed by the development of an excess of lactic acid.

The phosphate of lime is readily soluble in this acid. Lehmann found in his experiment that "68.55 parts of basic phosphate of lime were dissolved by 100 parts of anhydrous lactic acid, while a fluid containing 100 parts of anhydrous acetic acid could only dissolve 17.49 parts of the same salt."* A perfectly sound tooth which I placed in a small quantity of lactic acid furnished me by Prof. Parrish, of the Philadelphia College of Pharmacy, was much softened after remaining in it for twelve hours only. Owing to the solvent power which this acid exerts on phosphate of lime, it is probable, therefore, that the proportion of this salt contained in the food is rendered soluble, and instead of contributing to the nutrition of the bones and teeth is carried out of the organism. Again, it is one of the beautiful laws of the animal system, that when any material is developed in greater proportion than the economy demands, that it shall be got rid of by means of the excretory organs. It is thus that in a state of health the excess of calcareous salts are removed from the system. In the condition under consideration, the excess of lactic acid is carried out of the organism by means of the kidneys and salivary glands. The saliva by this means is changed from an alkaline to an acid cha-

* Lehmann's Physiological Chemistry, vol. 1, p. 376.

racter, and exerts a most deleterious influence upon the teeth. They are thus exposed to the combined influence of a deficient supply of material for the purposes of nutrition, and the direct action of an agent whose solvent powers on phosphate of lime has been fully demonstrated above. Lehmann remarks, "In all the cases of diabetes mellites, which I have observed, the saliva has had an acid reaction; associated with this symptom, we sometimes find a copious secretion of saliva, which we have thus a good opportunity of analyzing. The zinc salt which was obtained, showed very distinctly the crystalline form of the lactate."* The saliva is acid, according to Donn ,† in "inflammatory affections of the *prima vi *, in pleuritis, encephalitis, acute rheumatism, intermittent fevers, and uterine affections." Although acid saliva has been observed in a large number of cases, there is not sufficient evidence to warrant the assumption that the acid reaction is invariably due to the presence of lactic acid. Wright, however, asserts that such is the case.

It has been proposed, where there is an apparent deficiency of the phosphate of lime in the teeth, that a continued administration of the subphosphate of lime internally should be pursued; and cases are reported of marked success attending such treatment. In former years this remedy was given internally in a sustained course of large doses in cases of rickets and mollities ossium. According to Wood & Bache, "it is said to have been employed in some cases with apparent success. Experience has not, however, confirmed the first report in its favor. It is probably altogether inert."‡

Whilst I do not question the correctness of the testimony in favor of this remedy, in a defective condition of the teeth, I cannot—believing as I do that we have no means of directly precipitating lime upon or into the osseous or dental tissues—imagine that it acts in any other way than by neutralizing the acid in the stomach. In fact, there is more than a sufficient amount of the phosphate of lime in the various articles of *diet*, for the due nutrition of the bones and teeth when digestion and assimilation is perfect. The amount of this salt contained in the different articles of food is much greater than one would at first suppose, being not only present to a large extent in vegetables, especially the corn grains, but also in animal food. In addition to this, Lehmann believes that it is formed within the animal economy. He says, "we know that several animal substances contain phosphorus in an unoxidized state, and that they are not removed from the organ-

* Lehmann's Physiological Chemistry, vol. 1, p. 95.

† Donne Physiology and Pathology of the Saliva.

‡ United States Dispensatory, p. 188.

ism till they are perfectly decomposed ; that is to say till they are partially oxidized ; in this process the phosphorous must be converted into phosphoric acid. We further know that very many animal substances also contain sulphur ; and in their decomposition in the animal body form not only sulphuric acid, but also uric, hippuric, and other acids, which must partially decompose the alkaline phosphates that find their way into the body from without, by the seeds of the cereals and leguminous plants, so that the liberated phosphoric acid must combine with the lime which enters the animal body with the vegetable food, or with the water used as drink.”* As proof of the influence that diet has over the osseous system, Chossat, by restricting animals to food containing little or no phosphate of lime, succeeded in inducing an artificial softening of the bones.†

Nature having been thus provident, so far as our food is concerned, if the operations of the economy are harmoniously performed, the materials for the development, growth and nutrition of the dental organs will not be found wanting. The indication, therefore, is to restore the general tone of the system. This is not to be accomplished by the empirical practice of exhibiting a single article as a specific ; but in the administration of such remedies, and in such restrictions of diet that each case demands ; of the medicinal agents, one may require an astringent, another a tonic, and a third an alkali and so on. The administration of the phosphate of lime, as I have already intimated, no doubt acts as an antacid. In the diet, by using the articles of food that contain the greatest proportion of the phosphate of lime, and abstaining, for a certain period at least, from the use of sugar, milk, and such articles of amylaceous food as contain sugar in excess,—which, as before stated in some cases of dyspepsia, are readily converted into lactic acid ;—the quantity of acid will be very materially diminished, and the phosphate of lime contained in the food, instead of being removed from the organism, may be carried to its various points of destination in the system. Other cases again will be presented in which different restrictions may be demanded. Digestion and assimilation improving under proper regimen, the teeth will no doubt be restored to a normal condition.

When called upon to treat such cases as we have been considering, let me trust that the reader will not be too easily discouraged, and on that account sacrifice organs, which, if he had labored to save, hoping against hope, would have crowned his efforts with success, and rendered incalculable service to his patients. Let him remember, under

* Lehmann's Physiological Chemistry, vol. 1, p. 376.

† Gaz. Med., 1842, p 208.

these circumstances, the spontaneous change that frequently occurs in such teeth, and in addition to the performance of operations demanded, give such advice as is calculated to bring about that desirable consummation.

NOTE.—In a conversation with my friend, Dr. Calais, of Hamburg, since receiving the proof sheet of this article, he informed me that Steibel mentions a fact which goes far to substantiate the suggestion advanced by me in relation to the analogy existing between mollites osseum and the softening of the teeth. In confirmation of this, he has very kindly furnished me with the following translation from Virchow: “Osteomalacia is sometimes confined to single parts of the skeleton, as the pelvis and vertebral column; in one case of Scutteten’s (*Gaz. Med.*, 1841, p. 428,) only one foot was affected; but in most cases it proceeds by and by through the whole osseous system; the bones of the head are not exempt, and even the teeth have been found softened and metamorphosed into a cartilaginous substance.—*Stiebel’s Osteomalacia in Virchow’s Pathologie u Therapie*, vol, 1, p. 540.

For the Dental News Letter.

DENTAL CONVENTIONS.

BY J. FOSTER FLAGG, D. D. S.

In view of the approaching convention to be holden at Cincinnati, I deem the present occasion peculiarly appropriate for offering some reflections which have reference to these meetings. I will, however, preface with the declaration that, so far from laying them before my professional brethren *in extenso*, I shall endeavor to be as concise as possible, allowing what I consider plain truths to present themselves as subjects for thought for those who have what they conscientiously believe to be the best interests of our specialty at heart.

The object of dental conventions is avowedly for that interchange of information and experience, which shall tend to improve the practitioners of dentistry, in the exercise of the duties devolving upon them, and confirm the wisdom, or expose the error, of received methods and opinions; and we must add, as a feature by no means to be overlooked, that much good was expected to be derived from that personal acquaintance which would result from a meeting of gentlemen engaged in the same profession, and consequently interested in conversation appertaining to the same subjects.

How have these objects and expectations been realized?

What has been the *true* character of many of the discussions which have been held, regarding them as *professedly scientific*?

Who can point out a fact established, which has not long since been well known to be such?

What subject has been treated, of which even a moderate dental education does not necessarily imply more knowledge than could possibly have been obtained from such discussion?

Are not the satirical remarks to which each "report of proceedings" has given rise, not only in private circles, but even in some of our periodicals, justly merited?

Are we not cognizant of such improper and unprofessional abuse of the mere fact of *attendance* at these conventions, as should cause every dentist who desires that his profession should be respected, to hesitate ere he lends the sanction to such conduct, which, to a certain extent at least, his presence and participation at such conventions would give?

Is not a review of the reports of the proceedings of the assembled dentists of the United States humiliating, when we reflect, that to *American* dentistry is accorded the first rank by the whole civilized world?

Ought not those same reports, on the contrary, to be of such a character as to command the respect of all intelligent practitioners of that general science of which we claim to be a specialty, leading them to feel with us, that there is something more in dentistry, than many of them have ever yet been compelled to acknowledge?

And if this ought to be so, and if we would give *satisfactory* answers to the other questions propounded, I would ask how can we arrive at these desirable results?

To my mind there seems but one course to pursue, which is, the organization of conventions, requiring as a qualification for membership, the possession of either a dental or medical diploma; which credential would certainly evince that an individual had a due appreciation of the importance of a certain degree of preparation before entering upon the practice of that which is dignified with the title of a "profession." To some it may appear that I lay myself open to the charge of "old fogysm," than which nothing is more heinous in this progressive age; and again, it may be stated that "illiberality," as it is termed, has been already weighed in the balance, and found wanting; but I would have gentlemen to remember, that the present offers facilities for education which it becomes incumbent upon those who would style themselves dentists, to embrace.

It is not supposed that medicine, in its infancy, exacted the requirements of to-day, nor could dentistry demand them in its earlier years; but medicine has now assumed that high position which enables it to

bear even the attacks of ridicule unscathed, a position which may indeed be considered pre-eminent. It has constituted itself a support worthy of much reliance in the time of trouble, and its practitioners are accorded that social standing which, as dispensers of relief to suffering, is theirs by right. It is now for dentists to place dentistry upon that same level; this can only be done by convincing the intelligent that its practice is based entirely upon scientific principles; that its proper pursuit is dependant upon a knowledge of these principles; and that its legitimate practitioners have that knowledge.

I would, then, respectfully submit, that a valuable initiatory toward such a desirable consummation, would be the requirement of collegiate qualification to ensure recognition by dental conventions.

For the Dental News Letter.

A REMEDY FOR SPRINGING OR WARPING OF PLATES.

Much has been written upon the cause and prevention of plates springing in soldering or cooling. Many causes have been assigned, and preventives recommended. I propose to give an infallible remedy for all springing or warping of plates, and remove the perplexities which have arisen to the dental practitioner. It sometimes occurs in swaging a plate, if it contains platinum or other hardening metals, that there remains a visible spring which the swages do not overcome. If this is the case, I clamp the plate upon a plaster cast with steel clamps, bent like the letter U; then with my blow-pipe and lamp I heat the plate red hot; perfect submission is the result. After I have soldered teeth to a plate, if I find that it is sprung or warped, I then make a cast of plaster and sand—about one-eighth plaster; when hard, clamp the plate firmly to the form, with as many clamps as are required to spring the plate to a perfect fit to the cast or form; then envelope teeth, plate, clamps and all in a mass of plaster and sand. When hard, place the mass into a furnace, and heat it clear through red hot. In order to know when it is red hot in the centre, I lay a bit of wire, one-eighth of an inch in diameter, across the top of the teeth, and when enveloped, withdraw it; into which hole I can look while heating; care must be taken not to melt the solder; cool off in the usual way, and I have the pleasure of a perfect fit to my plaster form. Plates that have been worn some time, and do not fit perfectly, may, in many cases, be remedied, by taking a new mould of the jaw, and cast as before described, including the whole process. I have brought a plate to a perfect fit, when it was warped one-fourth of an inch, without loosening or injuring the teeth. By this process, complete victory is gained.

S. F. DEXTER.

THE DENTAL NEWS LETTER.

JULY, 1858.

HASTY OPINION.

Perhaps no profession or calling has suffered so much from the formation of hasty opinions, as dentistry. So various are the results of our operations, that it is almost impossible to foresee the result of a single operation. No case, scarcely, is a criterion to judge another by. Each one is apparently in itself an experiment. We may insert a single tooth by atmospheric pressure, with complete success in one case, and entirely fail in another. We may supply an entire upper set with a plain plate for one patient, and fail by complete suction in another. The dentist who will encourage or discourage his patients by either result, will do them injustice; so much depends upon the patient, or something which he cannot know, until he tries, in artificial cases, that opinion, with any certainty, is impossible. Definite questions are constantly put to the dentist, but, in justice, definite answers cannot be given. As true as this is between the patient and the dentist, so is it between the dentist and his profession. If a new feature of practice is suggested, it is embraced by some, and urged upon the profession prematurely; it does not receive sufficient time for trial; it meets with violent opposition from another source, and many good things are lost, which, if they were properly applied, would result in some good in their proper place. Each one is not restrained in claiming too much for his improvement or suggestion. Risodontrophy, capping nerves, or destroying them, with arsenious paste, ether, galvanism, enamel plates, continuous gum, cheoplasty, sponge gold, adhesive gold, cylinder gold, amalgam, &c., &c., all in turn proposed to create a kind of revolution in our art. Too much has been claimed for them, and the public induced to look for too much. The dentist who does not adopt one or the other new thing, in toto, and ride it as a hobby, is not considered a thorough dentist, instead of exercising an opinion for himself, and adopting that which will, in his judgment, be of the greatest good to his patient. We are not willing to condemn a dentist for adopting a different plan of operating from us, if he succeeds in doing what he holds out to his patient. We see cases every day that have not met the expectations of the patients, and, consequently, the whole

profession suffers. The profession seems to be too much divided on the many points of interest to it.

Some of the profession think that we oppose them in every thing that we ourselves do not adopt. This we wish to say, for all time to come, is not so. If we see a case of risodontrophy that is doing well, we let it alone. If we see a case of continuous gum that is doing well, and applied with judgment, we do not condemn it; we have seen some beautiful cases of this work. We do not use ether, but send our patients who wish to try it, to those who are acquainted with its use. We are glad that we have such persons to send to. We see many cases of amalgam that we do not condemn. Adhesive gold and crystal gold may be eminently useful in some cases; and if others use them entirely, we will find no fault, but we do not think that we are behind the age by not using them. We are opposed to ultraism in any shape, and still we do not mix every thing together, or form *hasty opinions*.

J. D. W.

THE APPLICATION OF GALVANISM IN THE EXTRACTION OF TEETH.

For some months past, there has been in this city certain persons professing to extract teeth without pain, by the use of Galvanism, and about which we have received many letters of inquiry.

Sufficient interest was felt in the matter to induce the appointment of a committee by the "Franklin Institute" of Philadelphia, also one by the "Pennsylvania Association of Dental Surgeons," and from the report of the former we shall make some extracts, and the latter we hope to give entire elsewhere.*

We had been of the opinion that the effect of the application of an electrical current to a tooth, would not lessen the amount of pain usually experienced in extractions, but simply change the character of that pain, yet causing more or less suffering; and we found similar opinions were entertained by one or more occupying prominent positions in the profession, consequently we had given but little attention to the matter; but now, from the increasing interest manifested by the profession as evidenced by personal and written inquiries made of us, and the position it has assumed, gives it an importance that requires some notice in our journal, and we propose, therefore, to give such facts in connexion with it as we have been able to collect.

Any agency that promises the alleviation of pain is to be sought after, and such an one is peculiarly desirable in the extraction of

* This report has not yet been made.

teeth; for how many there are whose health is impaired by retaining in their mouths diseased teeth and roots, rather than submit to the pain of extraction. If, therefore, by this process, the pain, if not entirely annulled, be only diminished, and that without the risk and dread sometimes attending the employment of the ordinary anesthetics, much every way is accomplished; and for these very important considerations we trust the profession will test the matter thoroughly and report results.

The application is somewhat as follows:—The negative pole or wire of the ordinary electro-magnetic machine—which is a graduated battery—is attached to the forcep or one handle of it,* and then placing the metallic handle of the other pole in the hand of the patient; by this means a circuit is at once formed, on the forceps coming in contact with the tooth. An additional appliance is used in the form of a small spring footboard, which interrupts the current, but by pressure of the foot upon it, the circuit is at once formed.

This interruption is said to be desirable until the forcep is placed upon the tooth, when the circuit is formed and the extraction made at once.

One gentleman remarked to us that he often permitted the current to flow for a second or two before the attempt at extraction. It is given by another as his experience, that *in a protracted operation, the prolonged pain would overcome or neutralize the effects of the electric current*, and that in such cases, no exemption is afforded the patient by its use.

We witnessed the extraction of some ten teeth and roots from the mouth of an intelligent but nervous lady, whose features we watched closely throughout the operation, and who remarked that she “suffered very little pain from their extraction,” and when complimented on her courage, said, in substance, that “she could not lay any claim to courage, for her endurance must be wholly attributed to the galvanism, which rendered the operation comparatively a painless one.”

A peculiarity was noticeable in this case, viz:—The entire exemption from pain in the extraction of a molar tooth, the surrounding parts of which were very sensitive from being in a highly inflamed condition, and which rendered this exhibition of its effects very satisfactory. One thing, however, we could not fully understand, which

† One gentleman we saw operate, had the attachment made by drilling a hole through the end of one handle of the forcep, through which he passed a small copper wire hook, to which the flexible cord of the battery was attached.

was the shrinking of the patient on the application of the forceps, for, we reasoned, if no pain, why this indication of fear? But this was clearly explained to us in a subsequent experiment by another operator, (when we witnessed the extraction of several teeth and roots, the patient—a nervous female—asserting that she suffered very little pain,) by having the application made to our own mouth. The sensation, when the current was completed, being anything but agreeable, and somewhat similar in pungency to the application of fire, or a jet of flame to the living tissue, when we could readily understand why the pain of extraction would be neutralized to a very great extent under this influence, and were at once reminded of our former opinion of its merely changing the character of the pain. Still, had we any teeth requiring extraction, we should certainly test the battery, in the hope that we would be the gainer thereby.

From the report of the committee appointed by the Franklin Institute, we extract as follows:—

“One hundred and sixty-four teeth were extracted in the presence of the committee. * * * * *

“The committee is satisfied from the observation and experience of its members, that in a large majority of cases of extraction with this apparatus, *no pain whatever* is felt by the patient. * *

“To test the question whether the effect might not be simply mental, the circuit was broken without the patient being aware of it, when the usual pain was experienced, although, in the same patient, and on the same occasion, teeth had been removed while the current was flowing, without causing pain. * * * * *

“The sensation produced by the passage of the current is not painful, it being so adjusted as to be *just perceptible* to the patient. The committee believes its use to be entirely without danger, and not likely to be followed by any unpleasant after effects. * * * The operator requires no new instruments except the battery and coil. *

“As to the theory of these very singular and unexpected results, the committee does not express an opinion; of the facts it is fully satisfied.”

A gentleman out of the city, who felt a great desire to test it, reports:—

“I have extracted about 30 teeth since I returned, by the “Galvanic Process,” with the most satisfactory results, some saying that it did not ‘hurt a bit,’ (to use their own language.)”

In the *Southern Medical and Surgical Journal* for June, we find a communication from D. S. Chase, M. D., D. D. S., detailing his experience in extracting “more than fifty teeth” with electricity, from which we extract as follows:—

“The *First Case* in which I tried it, I removed seven teeth, all firmly set—five molars and two cuspidati or eye teeth. In ex-

tracting the first tooth, too much electricity was applied, and the patient complained of pain from the shock, but not from the removal of the tooth. In the second tooth too little was applied, and the tooth itself gave pain. After this, we were able to regulate the quantity, so that neither the electricity nor the extraction of the tooth gave much pain. Patient not at all nervous, and frequently expressed herself highly pleased with the operation. The feeling experienced during the extraction of the teeth, as she expressed it, was a benumbing sensation about the tooth, which appeared to be attached only to the gum.

"Second Case.—Extracted six teeth. Patient somewhat debilitated from previous suffering with her teeth, and quite nervous. Suffered considerable pain during the operation, but would not allow one to be extracted without electricity.

"Third Case.—Extracted four teeth. Patient suffered but little pain.

"Fourth Case.—Extracted a molar tooth, that had been previously broken, for a highly intelligent gentleman from a neighboring village. He was much pleased with the operation, and was very enthusiastic in his praises of electricity as applied to Dental Surgery.

"Fifth and last Case, that I will report at present.—Extracted *ten* teeth for an elderly lady. Expressed no fear or pain during the operation, and seemed to treat the affair as a mere trifle, which might be attended to any morning, without much inconvenience.

"The general expression by those who have tried it, seems to be decidedly in favor of electricity in extracting teeth.

"In some of the cases mentioned above, the gums were lanced by the same process, by connecting one pole of the battery with the handle of the lancet, while the patient held the other—the hand of the operator being protected by a silk glove."

As will be noticed in the above extract, a glove is necessary on the hand of the operator to prevent his receiving a portion of the current, or the intervention of a napkin between the operator's left hand and the patient's mouth may be sufficient.

The suggestion of connecting the lancet with the battery is a good one, and worthy of attention.

We have been informed, we may say in conclusion, that a patent has been obtained for this application of galvanism, and that it is the intention of the proprietors to dispose of office rights. About this, however, we need say nothing further now, than that we regret any restriction to its universal use, should be placed upon a discovery claiming to be such a blessing to the human race.

J. R. M'C.

Western Dental Society.—The annual meeting of this association will be held in Quincy, Illinois, on the 3d Tuesday, the 20th of July next. Of course, the Great West will be fully and largely represented at this meeting.

See Cover, for various advertisements of interest.

American Dentists Abroad.—In our last January issue, we noticed, under this head, the name of Mr. W. Childs, of Leeds, England, as having received his dental education in the United States. This, we have been informed, is an error. The character of his little pamphlet—which has been sent us by a friend—in which he claims to have “passed an examination at the American College of Dental Surgeons,” (an institution we never heard of,) can reflect no credit upon any institution or individual, and but for it we should have taken no further notice of the matter.

J. R. M'C.

American Dental Convention.—We would remind our readers that the next session of the Convention will be held in Cincinnati, commencing on the first Tuesday, which will be the 3d of August.

An immense gathering may be looked for.

That all may be prepared, we append the subjects for discussion:—

1. The best means of securing and preserving good teeth.
2. Treatment of exposed nerves.
3. Mechanical Dentistry.
4. Filling Teeth.
5. Miscellaneous.

Extracts from the Dental Periodicals and from other Publications.

BY J. R. M'C.

American Journal of Dental Science—April.—In this number we find a lengthy communication from Dr. A. J. Volck, of Baltimore, which aims to be a very sharp review of the proceedings of the last meeting of the “American Dental Convention.”

The writer, unfortunately, either cannot or will not see any good in these conventions, and travels out of his way to say some very harsh things of both persons and proceedings.

A decent respect for his profession and its interests would have induced, we should think, a more kindly tone, in pointing out what to him appears to be such glaring mistakes and errors in organization and action, for by such a course he would the more probably bring about their correction. We would have him remember the old phrase that “more flies may be caught with one drop of molasses than with a barrel of vinegar”—more may be accomplished with *kind* words than with *harsh* ones.

Errors there doubtless are,—1st, in the ultra-democracy in admissions to membership. 2d, in the very large liberty taken by some in occupying the floor and time of the convention. These things, we have contended from the beginning, need correction, but they are not likely to be remedied by such cut and thrust articles as the one under consideration. His manner throughout, in treating the subject, is ag-

gressive and somewhat violent and pugnacious, and reminds us of the *gentleman* represented at "Donnybrook Fair," trailing his coat tails behind him, and exclaiming at every step, "won't somebody tread on my coat tail?"

London Quarterly Journal of Dental Science, for April.—Much of this number of the Journal is occupied with the discussions of the college of dentists, on the propositions submitted to them by a committee of their own appointment, to meet a similar committee from the "Odontological Society," with a view to the union of the two associations.

That our readers may clearly comprehend the main difference existing between these two associations, we will state, briefly, that the association termed the "College of Dentists," contend that dentists are quite competent to teach and to grant diplomas, while the Odontological Society have insisted upon the degrees emanating from the "Royal College of Surgeons." The first named association comprises probably three hundred, and the latter less than one hundred members.

The committee reported terms of amalgamation, the first item of which was that the name of the amalgamated body shall be "The Institute of British Dentists," thus, both dropping their former distinctive titles.

The substance of the succeeding articles of agreement is, that "they shall press upon the College of Surgeons the necessity of granting, within a reasonable time, special dental diplomas, on the following terms. That the Court of Examiners, at the College of Surgeons, of candidates for the dental diploma shall consist of surgeons and dentists in equal numbers. That the dental portion of the Court of Examiners, at the College of Surgeons, of candidates for the dental diploma, shall be chosen by the amalgamated body of dentists, and that it shall not be essential that the dentists in such Court shall hold the diploma of the College of Surgeons. That in the event of the College of Surgeons declining to grant the above specified dental diplomas, the two dental societies on thus uniting, pledge themselves that the united dental body shall grant its own diplomas. That the United Dental Society shall be the chief educational body in all subjects connected with dental surgery and mechanics."

These propositions for the union were very fully and very ably discussed; those opposing, manifesting, as indeed all did, great reluctance in giving up their present name. By a vote of twenty-seven yeas to thirty-four nays, the propositions for amalgamation were rejected, and the meeting adjourned.

At a subsequent meeting, it was proposed that members, not residents in town, should be entitled to vote by proxy. The apparent object of this motion being to have a full expression of the entire

membership on the subject of amalgamation. After considerable discussion, this motion prevailed, with but one dissenting voice.

At a later meeting, "The chairman explained that the meeting had been convened to reconsider the terms of amalgamation proposed by the late delegates, as it was thought that the decision upon them on the 8th of January, was given by, comparatively speaking, a small meeting."

"Mr. Lintott considered that the meeting was not competent to take the terms into consideration, because they were precisely the same as those which had been rejected. The thirteenth law was explicit on this point; it would be found on reference to it, that at every meeting of the college, the resolutions of the majority must be binding.

"Other gentlemen expressed a similar opinion.

"Mr. Purland said that the meeting being clearly incompetent to entertain the propositions," (those offered for the union of the two associations, and rejected at a former meeting,) "he should of course withdraw the amendments, of which he had given notice;" when the meeting was dissolved.

In consequence of this action of the members of the "College," in declining the proposed terms of union, the officers, (who were all favorable to it,) who thought they saw in it a want of confidence in them, resigned. The union, therefore, so desirable in many respects, has not been consummated, and we fear is farther off now, than previous to the negotiations; yet there is no reason why the College of Dentists should lessen their efforts, or become in any wise discouraged, for their wonderful increase in the way of members, give them every encouragement, and their success and usefulness have been more than they could reasonably have anticipated, for the length of time they have been in existence; and we sincerely trust that those office-bearers who contributed so much in the initiation and progress of the "College of Dentists," will prosecute their work as ably and efficiently in the future, as they have in the past; in which case, there need be no fears as to the result.

James Bate communicates a short article on what he terms "*Elevator Forceps*," in which he describes precisely, both in form and in application, what has long been known in this country as "*Physic's Forceps*," for the extraction of the lower wisdom teeth. He says, "I have never seen a pair like them, save in my father's surgery, and they are new to all to whom I have shown them."

Another article from the same correspondent, strongly condemns the "bone work," so extensively employed by the profession in Great Britain, urging that its absorption of the fluids of the mouth "pro

duces its rapid decomposition, thereby tainting the breath in the most disgusting and offensive manner, etc.'

It has always been a matter of wonder with us, why the profession there, should persist in the use of so temporary, and, ultimately, so filthy a material, for artificial dentures.

We close our selections from this periodical, by copying entire the following very interesting paper, read before the College of Dentists:

On the Decay of the First Molar.—By DR. REID, of Edinburgh.—“Those who have turned their attention to what may be termed the rotation of dental decay, that is, the order in which the permanent teeth disappear, must have observed, that of the eight classes to be found in the adult mouth, none seem to be so perishable as the first molar, the six-year-old tooth. Writers on the statistics of dental disease, may differ from each other in their calculations as to the relative predisposition of each class to abnormal condition requiring treatment, yet they all agree on one point, namely, the fragility of the first molar, in its non-resistance to the inroads of disease.

“It is proper here to premise, that, if in dealing with the subject under discussion, the conclusions arrived at, differ materially from the statistics of other writers, it must be held to arise from the difference in the circumstances under which the investigations have been conducted. Private practice affords but few facilities for the recording of observation. The routine of professional duty would suffer too great an interruption, were we to sacrifice valuable time in noting cases as they occur in daily practice, and in but few instances would the faithful return of the patient, enable us to follow out those investigations which are necessary to be pursued, ere we can do else than merely speculate upon points which as yet have not been made the subject of scientific inquiry. Thus have those, desirous of investigating disease, been driven to do so, by the aid of hospital or dispensary practice, embracing cases in patients belonging to the lower classes of society, where the inquirer must lack the opportunity of watching the condition of such mouths as come under treatment, the patients of to-day seldom making their appearance again; moreover, the mode of treatment being necessarily narrowed into the mere surgery of the teeth.

“The circumstances under which the conclusions hereafter noted, were arrived at, differed in many respects from those above alluded to; eleven years of professional attendance on the young ladies of the Merchant Maiden Hospital, of Edinburgh, affording facilities for treatment and observation, such as rarely fall to the lot of the dental practitioner, the mode of treatment differing in no respect from that pursued in private practice, except in the substitution of a less costly material than that generally employed, in cases of stopping.

“I may here remark, that the Merchant Maiden Hospital is an *educational* institution, constituted by Act of Parliament, and dedicated to the maintaining and educating the daughters or grand-daughters of retired, or deceased burgesses of the City of Edinburgh, to the bene-

fits and privileges of which institution, about one hundred, betwixt the ages of seven and seventeen, are admitted.

“With these explanatory observations, I shall proceed to take up, in succession, the points that bear on the subject under discussion.

“By the appended table, it will be seen, that during the above-mentioned period of eleven years, the gross number of operations performed on teeth of all classes, amounted to 1,400. Of these, 855 were stoppings, (807 being permanent, and 48 preparatory,) 470 were extractions, (411 being milk teeth, and stumps of the same, 59 being permanent teeth, stumps of the same, and supernumerary teeth,) the remaining 75 being minor operations, such as excision of carious dentine, (where a discharge of pus indicated the danger of stopping the cavity,) removal of salivary calculus, scarification and arresting of hemorrhage.

“Of the 807 permanent stoppings above noted, 66 were milk teeth that circumstances rendered necessary should be retained in their places as long as possible, and 741 were permanent teeth, of which last mentioned number we shall forthwith treat.

“In apportioning these 741 permanent stoppings among the various teeth, taking them according to their proximate position in the jaw, and starting at the mesial line, we have of—

Central Incisors,.....	18	Second Bicuspid,.....	13
Lateral Incisors,.....	22	First Molars,.....	637
Canines,.....	2	Second Molars,.....	27
First Bicuspid,.....	22		—
Total,.....			741

The third molar being excluded from the calculation by reason of the late period at which it assumes its position in the maxilla, keeping in remembrance that we are treating of the adolescent mouth.

“If the teeth are classified according to the order in which they take position in the jaw, it will be found by the table, that of the 741 permanent teeth stopped, no less than 637 were first molars; that is, of the seven classes so operated on, nearly 86 per cent. belonged to one class alone, and that standing first in the order of dentition.

“Of the remaining six classes, the individual per centage is as follows:—

Central Incisors,..	2½ per cent.	First Bicuspid,..	3 per cent.
Lateral Incisors,..	3 “	Second Bicuspid,..	1½ “
Canines,.....	0¼ “	Second Molars,..	3½ “

or thereby, the fractional parts being put down in round numbers for the sake of brevity—the sum of the whole being 14 per cent. only on the gross number of stoppings.

“Having thus shown, on a given number of permanent teeth, the ratio of stoppings in each class, the point at issue will not have been properly met, until the whole number of first molars operated on is included in the calculation; thus—

First Molars stopped,.....	637
Same class extracted,.....	43
Stumps of same extracted,.....	7
	—

which number represents the total of those teeth that had either been attacked or altogether destroyed by disease.

"As already shown, the gross number of permanent teeth of all classes operated on, was 741; deduct from this the number of first molars as above given, and there is left 54 teeth, representing the six remaining classes in the adolescent mouth. Thus have we a per centage of nearly 93 in favor of the first molars. Again, while this class constitutes but a seventh part of the permanent teeth, developed at the age at which the inmates of the Merchant Maiden Hospital lose the benefits of that institution, or, in other words, while the first molars form but one-seventh of the whole number of teeth then developed, the ratio of mortality stands not as 1 to 7, but nearly as 19 to 20.

"With the view to satisfy inquiry as to the periods of life at which these teeth are brought under the influence of disease, I have, by reference to the ages of those operated on, separated the 687 cases into five divisions, which may be termed periods of decay. These I have taken at the 8th year, the 10th, 12th, 14th and 16th, being guided in this division by the ages at which the pupils are admitted to, and cease to participate in, the benefits of the Institution, and which, as already mentioned, are 7 to 17 years respectively. On the whole number of operations—

The first period gave.....	247	The fourth period gave....	51
The second ".....	279	And the fifth ".....	19
The third ".....	91		
Total,.....			687

"It may be asked, how happens it that the numbers in the second period exceed those of the first, while, in others, there is a marked and progressive decrease? The explanation is, that by the law regulating the admission of pupils, 'it is provided that none can be chosen or presented, who are under 7, or above 11 years of age;' and, as the greater proportion of those so admitted have already reached their eighth year, they consequently fall under, and swell the number of cases belonging to the second period.

"While noting the small number of cases falling to the remaining periods, I would observe, that few as they are, circumstances have tended to increase them, inasmuch as, were the years 1847 and 1848 kept out of the calculation, the proportion would have been considerably less, and that for the following reasons:—

"During the two first years of my service in the Hospital, the patients operated on were principally among the more advanced pupils, they having suffered longest from a restricted form of practice, extraction having hitherto been the only recognized mode of dealing with the dental ailments incident to pupilage. Did I deem it necessary to adduce proof in support of this view, I should only point to the number of first molars extracted in 1847 alone, as shown in the table, and which amount to 50 per cent. on the whole number of operations performed in that year.

"In the title of this paper, the term 'decay' is made use of in a general rather than in a particular sense, as being the remote, rather than the proximate cause necessitating removal, and as the origin of the various diseased conditions of the teeth incident to youth. As already shown, with the exception of those noted for 1847, the propor-

tion of first molars extracted was comparatively few on the whole number of those teeth operated on; any inquiry, therefore, into the causes that rendered extraction necessary, would, in so small a number of operations, have yielded but meagre information on the point, besides being apart from the subject under discussion.

“An inquiry into the causes inducing diseased condition to the extent shown in this class of teeth, may be satisfied by attributing them to diathesis—to the effects of disease in the system, acting on the teeth during their formation, as frequently met with in the granulated deposit of enamel—to want of constitutional vigor, as shown in the presence of acidity in the secretions of the mouth, operating unremittingly on the teeth, and ultimately effecting their destruction.

“It would best be answered, however, by pointing, as a primary cause, to the small proportion of phosphate of lime entering into their composition. Were the several classes of teeth in any one mouth subjected to chemical analysis, I doubt not, it would be found that the quantity of calcareous salt contained in them, varied according to the order in which they assumed their positions in the maxillæ, the minimum portion falling to the first permanent molar. The subject has already engaged the attention of writers of high authority, some of whom have brought analytical chemistry to bear on the point, yet too limitedly to admit of being received as conclusive proof of this theory. Looking, however, to the results noted by Berzelius, Pepys, Lassaigue, Von Bibra, and other experimentalists, it appears that the teeth of adults yield a larger proportion of the inorganic elements, than can be traced in those of children. Rousseau comes still nearer the point. He subjects both classes of teeth, deciduous and permanent, taken from the same mouth, to analysis, and finds the larger portion of calcareous matter in those of the second dentition. It therefore may reasonably be inferred, that the first permanent tooth partakes of the nature of its predecessors in want of density, and consequent absence of resistant power when brought under the influence of chemical action produced by salivary acidity.

“This state of the saliva I have frequently noted where the teeth presented an appearance as if chemical influence had been at work, subsequent observation showing that even the substances employed in stopping had been similarly affected. Yet, as time wore on, and the constitution acquired strength under the benign influence of careful tending, nourishing diet, and regular exercise, have I noted cases, that at one time held out but a discouraging prospect as to future comfort, improve as dentition advanced, the more lately developed teeth occupying and retaining their destined positions, unassailed by those agents that had worked the destruction of the deciduous teeth, and materially injured the earlier of the permanent set; and this, it may fairly be assumed, because they were no longer subjected to the malignant effects of salivary acidity.

“Having alluded to the traces of chemical action found in the material used in stopping, I shall offer a few remarks on the point, although apart from that under immediate discussion.

“The substance chiefly used was the cupreous amalgam known as Sullivan’s cement, and although prepared by myself, and from the one formula, yet it presented varied appearances, according to the charac-

ter of the mouth in which it had been made use of, rather than the length of time it had remained therein. The appearances were, deep black, greenish black, dusky brown, approaching to the natural tint of the metallic base of the stopping, and silvery white. With the first two colors, there was little trace of wasting on the surface, the stopping remaining undecreased in volume, and which I attribute to the secretions of the mouth being rather alkaline than otherwise. With the others, there was a considerable diminution in bulk, especially in the last-mentioned. In such cases, the presence of acid in the saliva was too evident to remain a matter of doubt, and which can easily be accounted for, on the principle of the strong affinity that saliva has for oxygen, readily absorbing it from the air, and imparting it to other bodies, such affinity being dependent on the condition at the time of the fluids composing the saliva. The state of the crown stoppings could not be taken as evidence of this fact, seeing, that to chemical action might be attributed that which was the results of mechanical abrasion. Such, however, could not be the case with lateral stoppings, where occasionally erosion, equally rapid and extensive, was to be found.

“In a few of the last-mentioned cases, I had, on operating on front teeth, employed the metallic filings now generally in use, but in no case did I detect any very decided appearance of wasting. It may, therefore, be inferred, that while the condition of the saliva, or, we may say, the peculiar acid to be found in it, acted on the one amalgam, it had no perceptible effect on the other; not that the other might not be similarly affected, were it exposed to secretions in which acid of a different character existed. On the whole, however, the investigation afforded favorable evidence as to the durability of the cupreous preparation, a quality that goes far to compensate for its tendency to cause discoloration.

“In treating of the first molar, and proving, as I have endeavored to do, its eminently perishable nature, and that at so early a period of life, I have confined myself to the consideration of that point only. Investigation might have been pushed further, and inquiry carried forward into advanced life, had opportunity for observation been afforded me, by the periods of decay being completed, which I have necessarily restricted to the seventeenth year. Thus might something like an approximation to positive liability to decay in the various classes of teeth have been arrived at. A consideration of the decrements of life, in connection with the loss of teeth, might also have afforded interesting results. The relative tendency to decay in the upper and under maxillæ, also on the right and left sides of the same; the liability of the various surfaces of the teeth to be attacked by disease, and various other points of like interest, might have received consideration, had time permitted. All such subjects, however, I leave untouched at present, feeling that I would be but entering on a field of inquiry too vast in extent to admit of justice being done it within the limits of this paper, however much so interesting a discussion might have served to relieve the dry statistics with which I fear I have already trespassed too long on the patience of the meeting.

“Dr. Reid also forwarded the following statistical statement:

TABLE OF OPERATIONS,

From 1847 to 1857, inclusive.

YEAR.	PERMANENT STOPPINGS.							PREPARATORY STOPPINGS.	EXTRACTIONS.							MINOR OPERATIONS.				TOTAL.				
	Cent. In.	Lat. In.	1st Bic.	2d Bic.	1st Molar.	2d Molar.	Tempy.		Canine.	For Disease.		For Prevent. Irregularity.					Excision of Decay	Scaling.	Scarification.		Hemorrhage.			
										Milk Teeth.	Stumps.	Milk Teeth.	Stumps.	2d Bic.	Supernum.	1st Molar.						Stumps of 1st Molar.		
1847	2	2	—	—	11	—	—	—	—	6	—	—	—	—	—	23	—	—	—	5	2	—	—	46
1848	—	—	—	—	114	—	6	—	31	14	13	—	—	—	—	13	—	—	—	3	11	—	—	210
1849	3	4	2	4	70	1	23	2	11	2	14	16	7	—	—	3	—	—	—	3	13	2	—	180
1850	1	1	4	—	67	2	19	—	6	3	11	15	23	—	—	—	—	—	—	3	13	—	—	168
1851	3	4	3	—	37	2	15	—	—	9	12	26	5	1	—	—	—	—	—	3	13	—	—	108
1852	1	5	2	—	71	3	—	—	—	—	13	7	23	—	—	—	—	—	—	—	5	—	—	150
1853	3	—	2	—	36	1	—	—	—	—	15	4	7	—	—	—	—	—	—	—	7	1	—	69
1854	3	3	2	5	88	1	—	—	—	1	4	6	17	—	—	—	—	—	—	—	2	2	—	132
1855	—	1	1	—	52	8	3	—	—	9	38	10	3	3	—	3	—	—	—	—	2	2	—	136
1856	—	1	—	2	30	3	—	—	—	4	7	9	4	1	—	—	—	—	—	—	—	—	—	64
1857	1	1	6	2	61	6	—	—	—	1	15	34	4	—	2	1	—	—	—	—	1	—	—	137
	18	22	22	13	637	27	66	2	48	49	142	127	93	5	4	43	7	57	11	—	—	—	—	1400

Dental Register of the West—June.—This number comes to us filled as usual with interesting matter, among which are the proceedings of the Michigan and New York Dental Societies, and “Dental Convention of Northern Ohio.”

Dr. W. H. Atkinson, on “Vent Fillings,” says:—

“Very early in my practice, (I should think as early as 1838,) it oftener occurred to the dental practitioner, to be called on to insert pivot teeth, than it now does. Having observed that pivot teeth, set upon fangs that had been dead, frequently swelled, and sometimes formed alveolar abscess, whilst those set upon fangs, with recently destroyed nerves, seldom, or almost never caused inconvenience.

“Conceiving the inconvenience to result from pent up foreign matter, I was induced to make a channel on one side of the pivot, admitting the escape of gases or fluid substances, and the result verified my suspicions to such an extent, that it passed into a rule of action, invariably to leave a vent in such cases.

“Among my first efforts at fang filling, a portion of them gave me trouble, as had my early efforts at pivoting teeth, and conceiving a close analogy to exist, thought a vent would operate as well in this as in a former case—I tested it, and have always been satisfied with the results of the experiment.

“*Mode of Operation.*—After having perfectly excavated the cavity, and shaped it to your mind, and rimmed out the fang as far up as possible, I take a piece of wire, of any tough metal, and after having drawn it to a fine point, and burnished smooth, dip it into creosote, and force it to the apex of the fang if possible. Fill the fang around the wire close and solid, being careful to preserve it in a direct line. Proceed to fill and finish the main cavity; then with a pair of flat-nosed plyers, withdraw the wire, thus leaving a small tube.

“All that is necessary for teeth having more than one fang, is to add a wire for each fang.

“*Case.*—Meadville, Pa., Sept., 1849.—Mr. A. H. requested pivot teeth set on the incisors and canines, of the superior maxillary. Trimmed down, drilled holes, inserted on compressed hickory pivots, without obliterating the balance of dental canal. About the third day after the operation, patient called with face tremendously swelled, and in great pain. Made an attempt to remove the pivots according to the then authority, found it impracticable for fear of removing fang and all. Upon more minute inspection, observed fluctuation at the point of each fang, into which I plunged a lancet. Bloody matter flowed freely, giving almost instant relief. In fact I made the six abscesses, as it were, but one. A bottle of creosote being upon my table, by inspiration (for I never had heard of such a thing before) I wet a pledget of cotton in it, and swabbed out each abscess; in a few days it was all well, and teeth all firm in the sockets. Two years after patient left that town, but I learned in 1850, that the teeth were setting on same pivots, and doing good service.

“*Note.*—This case opportunely occurring, taught me that ulcerated teeth might be cured, at least so far as single fanged teeth are con-

cerned. Upon this early hint I have gradually improved, until I now conceive it practicable to save almost any tooth, as long as even a moiety of its periosteal connections remain firm.

“Evidence of the above conclusion can be furnished by a series of cases, the history of which has been kept from the time of operation, which I will be happy to furnish if requested.”

Dr. F. S. Slosson, in his address on “Professional Character,” read before the Dental Convention of Northern Ohio, says many good things, some few of which, selected hastily, we append:—

“At each succeeding convention, our stand-point will be raised, and the limits of our vision extended.

“As we look back over years of toil, and trial, and doubt, we see much at first view that we could wish obscured from sight and from memory; but every trial, and every failure too, has done something to elevate us to our present high position.

“When we look around us, we wonder that so much could have been done with such material, in so short a time; and, as we extend the spinal column to its greatest tension, and poise on the tip of our toes to peer into the future, we see light and glorious success ahead. * * * * *

“That our profession should have a character, as distinctly marked as that of law, medicine or divinity, will not be questioned. * * * * *

“What is it but character that gives authority to the words, and importance to the decisions of one man above his fellows? *

“The man who together possesses knowledge, energy and skill, accompanied with high moral qualities, is the man who will do most for the profession. He possesses true dignity, has little of selfishness, and is above those jealousies and bickerings which disturb little minds. He is accessible to all; and his opinions are anxiously sought, and as freely given; he secures his own, by seeking the public good. His design is, that all he does shall be well done; and if he fails, as sometimes the best will do, he is ready to make it good. His charges are neither too high nor too low, as either extreme will destroy confidence. In short, he is governed by the higher law of doing as he would be done by.

“How strongly in contrast with such a man is that ignoramus whose advent into a town or city is heralded by a shower of cards, bills and advertisements, found in every vehicle in our streets, in every yard, and under every door, proclaiming the thousands of teeth set and filled during the last few weeks, inviting the community to improve this opportunity, as they may never see his like again! Such a one deals in base metals, soft solder, soft soap, and has a *softer* head.

“His patients pay a higher price in proportion to the value received, although he charges but “two and sixpence” for plugs, and a bit or a picayune for extracting. * * * * *

“We are prone to get upon a hobby of some kind; and the motive power is in the personal pronoun; for instance: ‘*I* extract teeth with a peculiar kind of instrument; *I* plug over or destroy the nerve with-

out pain ; I plug with crystal gold, or succedaneum ; I make porcelain plate, or porcelain teeth ; and I have the very latest patent for everything relating to the profession ;' to all of which is added the recommendation of some professor, clergyman or surgeon. * *

“ When a patient takes our chair he commits to us a personal trust, not dollars and cents, but of a trust infinitely more sacred ; and any person who does not feel its responsibility and is recreant of the trust, is unfit for his position, and unworthy of a standing in our profession. * * * *

“ The dental profession is in its infancy. The members of it have been for years like so many men deep down in some dark mine, each one working, and carrying his light on his own head, borrowing none and reflecting none. But when they meet, as sometimes they do, on such occasions as the present, the light is concentrated, dispelling the gloom of that narrow-minded selfishness which dries up and shuts up all the better and nobler qualities of the soul. The veriest sprig in the profession feels its influence, and straightens himself up to be more of a man, while some of the older ones, who feel they are not the only objects of God's special favor, the reservoir of all his choicest blessings, the depository of all the wisdom and intelligence of the land. * * * *

“ The dental colleges and periodicals, the conventions, in which are the free interchange of views of practice, are facilities for improvement, which a few years since we knew nothing of.” * * *

American Dental Review—May.—In this journal we find, reported by Dr. Isaiah Forbes, a case of hemorrhage from the superior maxilla, produced by a fall ; the child striking her chin against a stone wall, by which the temporary teeth were driven against the permanent bicusps, (the roots of which being only partially formed,) resulting in the rupture of the blood vessel supporting these teeth. At every effort of mastication, when much pressure was required, hemorrhage would ensue. The following was the treatment :—

“ I extracted the anterior deciduous molars, and with my pointed bistoury, directed by the inner grinding edge of the bicuspid, I made an incision into the sack (which would, of course, be the most dependent point when the parts were pressed to their normal condition,) which I thoroughly cleansed with tepid water, and then injected a weak solution of chloride of zinc, and pressed the distended membrane to its proper position, retaining it there by a compress, formed out of a cork to fit the palatine arch, and covered with muslin, which was kept saturated by diluted tincture of myrrh. The compress extended a little below the line of the teeth, and to avoid bandaging the head, it was secured by a small piece of wood extending across the teeth, which the little patient soon learned to retain in its place, and even to sleep with it in her mouth with very little effort or inconvenience, taking it out only at meal times.

“ The patient was of scrofulous habit, consequently she could not be put on simple diet, but was indulged with the richest food and

plenty of it, made up in the form of jellies, &c., and by strict attention was restored to her wonted health and spirits."

S. Clerotica, M. D., D. D. S., reports a case of diseased eyes from amalgam fillings, as follows :

"Mr. A——— had been for a length of time under the care of Doctor D———, of this city, being treated for an affection of the eyes, which had troubled him for some years. There was a constant flow of tears, with pain, and intolerance of light, his room being kept constantly darkened. There was considerable vascularity of the sclerotica especially around the cornea, which structure itself was somewhat opaque. These symptoms were greatly aggravated by any indiscretion in diet, and by the use of the slightest stimulants. All kinds of remedies had been, in vain, resorted to, and the affection seemed incurable. In September, 1857, I was called in to examine a tooth; in the course of my visit I directed the patient's attention to two superior molar teeth, which I found diseased at the roots; they both contained large amalgam fillings. Upon questioning the patient, he stated that he had suffered much from his teeth, and that the difficulty with his eyes commenced shortly after having some of them filled, about six years previous. I immediately removed the two molar teeth, and did not see my patient again for ten days. When I next saw him, he stated that, from the date of my last visit, he had suffered gradually less and less from pain, and his eyes had perceptibly become stronger. He could read by gas-light, which he had not done before for two years.

"I again examined his teeth, and proceeded to remove silver fillings, which antagonized with gold, replacing the whole with gold. Since then, I have seen my patient frequently; all appearance of disease in connection with his eye has entirely disappeared."

Fusion of Platinum :—In recent numbers of the *New York Tribune*, we noticed two articles, (rather local in character and claim,) under the above caption, in which we desire to point out one or two errors into which the writer has fallen, and at the same time to give a very brief history of the

"*Hydro-Oxygen Blowpipe*."—It will be noticed that this apparatus is the only known or effectual means in the fusion of platinum, and for this reason, if no other, possesses some interest to the dental practitioner.

We learn that in the year 1800, this blowpipe was invented by Prof. Robert Hare, of Philadelphia, and in 1801 was first brought to the notice of the scientific public, and of course attracted much attention. In 1836 it was enlarged so as to be capable of fusing five or six ounces. In 1837 or 1838 it was so enlarged that *twenty-eight ounces* could be melted at one operation. From 1832 to 1839 Mr. Joachim Bishop, of this city, was Dr. Hare's assistant, and made all

the alterations and performed all the labor in the enlarging and working of the blowpipe; and in 1840 he (Bishop) constructed the blowpipe which he has had in use ever since. These labors, however, were not unattended with risk, for in the preceding year, while manufacturing the gases—the oxygen at that time being formed from nitre—an explosion occurred, the injuries from which confined him to his bed for some two months.

But having abandoned the employment of nitre, no similar accident has occurred to him since, and he assures us that he never had an accident or explosion happen from “the gases becoming *mixed*” in the gasometers, and he thinks such a thing should never happen with any person properly informed, with ordinary care.

In the article in the *Tribune* the point is made and much commendation bestowed upon the “melting of *fifty-three ounces of platinum*” in one piece, the writer asserting that “twenty-eight ounces was the largest quantity of this metal ever fused at once until the late operations in this city,” and which is claimed as a great achievement, and attributed to supposed improvements or modifications in the blowpipe. Now, so far as quantity or capacity is concerned, we will state that some time since we were shown a lot of platinum of FIFTY-FOUR AND A HALF OUNCES IN ONE PIECE, *melted by that same blowpipe constructed in 1840, and the operator (Mr. Bishop) asserts that he can put in it lots of one hundred ounces, or more, if desirable*; so the recent “admirably effective” apparatus, and the wonderful performance of the operator alluded to, by the writer in the *Tribune*, is rather thrown into the shade by the one constructed in 1840.

He has likewise fallen into an error in regard to the localities from whence platinum is derived. He says, “the crude article comes to this city from California and Oregon, in the form of grains. A sample recently examined by Prof. Eaton, yielded 33 per cent. of platinum.” Now the fact is, that the mass of crude platinum or “native grain,” is found in South America and Russia—chiefly the former—and does not come to “this city,” but goes to Paris and London, where it is refined, yielding from 75 to 80 per cent. of pure metal; and we mention here as an item of interest, that it is not converted into metal by melting, but is first formed into a spongy mass, termed “sponge platinum,” by dissolving, and then by heat (but not a melting heat,) and pressure, is worked into a solid metal.

That from California and Oregon is so insignificant in quantity, and containing such a small per cent. of platinum as to render it of but

little interest and trifling commercial value, and, indeed, as yet, is not found in sufficient quantity in those localities to warrant the collection of it to any extent.

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A Sad Case.—We clip from a newspaper the following interesting letter addressed to the Post Master of New York, as follows :—

“P. M.—You will confer a favor by handing this to the Best and honestest Dentist in the city of New York providing you know Who He is which I have no doub you do.”

Here is the letter *verbatim et punctuatum* :—

“HUTSONVILLE, Ills Apl 19, 1858.

“Dear Friend for such I hope to find you Whoo ever you may be the subject on which I write although of little importance to you is to Me a constant Regret and Sorrow for this Reason that I had two front teeth taken out on act of a little decay which might have bin stoped but too late now I had had at different times teeth extracted to the amt of three and then having those two taken out clard My front teeth entirely those last sitting might have bin saved but the infernal Dentist if I may be allowed the expression incouraged Me to have them taken out and then have a g plate put in which I did and the day after they were extracted I had the plate put which has been upward of four weeks and since that time I have cursed the hour that gave Me Birth to think that I was so soft headed as to listen to Him and have too good teeth taken out that mite have bin pluged and saved and then answered to usue and have Bin pleasant and easy the balance of My days but alas I exchanged them for those set on plate and cursed be the hour that I had it done if I had ten common worlds to day I would give all to have them back again and if money and anything else will put them back I intend to have it done I want them inserted in the Jawbone and if you will do the Job I will come immediately and have it done I have spoken to one Country Dentist about it and He says that I would have to suffer death for a certain length of time and also says that the gums will not grow around them but as far as that is concerned I would not care a cent so I think the gum would fit closely around them and that would answer as well now Doc I want you to do this Job for death preferred to going without those teeth or wearing an infernal plate if you will that Job and do it so that they will do to Chew on and feel natural you can just set your price and I will pay it I want to know how long it would be before they aray and do to use I am willing to undergo the effects of chloroform or any thing else to have those teeth set back again let Me—— know when to come and I am on hand write By Ret mail sure for I am in distress.

Yours with Respect,

WES DRAPER.

P. S. I do not mean the same teeth But any other that you may see cause to use.”

Our friends in Illinois must look after this painful case and report upon it.

The Dental Reporter—Vol. 1, No. 1, April, 1858.—This is the first issue of another quarterly edited, and published by Jno. T. Toland, Cincinnati, Ohio.

The object of its publication as expressed in the introductory, is as follows :—

“The first object is the production and preservation of good teeth, etc. The second, to elevate the profession, not only intrinsically and in the estimation of its members, but also in the minds of the people,” etc. The third, to give prompt and reliable information on dental improvements and inventions,” etc. All good objects, and for their accomplishment he has our best wishes.

Selections and Abstracts from Medical and other Journals.

BY S. S. W.

“*Cause of the Coagulation of the Blood.* Being the Astley Cooper Prize Essay for 1856. With an Appendix on Practical Medicine and Pathology. By W. RICHARDSON, M. D. London: Churchill. 1858.—The causes of the coagulation of the blood have been studied and discussed by the greatest physiologists of all countries—by Malpighi, Lower, Borelli, Bayle, Collins, Ruysch, Petit, Butt, Glaubius, Quesnay, Leuwenhoeck, Boerhave, Haller, Senac, Hewson, Fordyce, the Hunters, Scudamore, Gulliver, Magendie, Bostock, and others whose name is legion. We do not hesitate to say that the problem remained unsolved, nay, mystified, until now. We have a clear conviction that Dr. Richardson has fairly earned for himself the glory of possessing the crown at which so many men, and of no mean note, have fruitlessly snatched. This is an honor of which he may be justly proud, while we, too, congratulate ourselves that a self-taught English physiologist, without the support of academic favor, has, by his own unaided efforts, worked out so great a result.

“The method of investigation which Dr. Richardson has pursued is strictly based upon the Baconian theory, and is to be regarded as one of the most difficult triumphs of this philosophic mode of inquiry.

“By somewhat more than 270 original experiments, not loosely devised as chance or ingenuity suggested, but following an orderly and logical sequence, this physiologist convinced himself that neither rest, nor exposure to the air, nor temperature, nor any fixed chemical substance, could be the determining cause of coagulation, and was thus led, by the strictest principles of exhaustive reasoning, to the investigation of a new point—namely, whether the coagulation of the blood be not dependent on the evolution of a volatile principle, under circumstances favorable to its extrication. It was thus that he discovered the spontaneous evolution of ammonia; and now, by reversing the line of inquiry, and pursuing the synthetical method, he succeeded in making it clear that the addition of ammonia to blood-clot effected its re-resolution, and that the subsequent evaporation was again followed by coagulation. These two propositions are exemplified by a long

series of able experiments, and thus a labor is completed on which English physiologists may be fitly congratulated."—*London Lancet*.

Treatment of Mucous Hemorrhages.—"It is obvious, from what I have heretofore said, that I regard most mucous hemorrhages to be of a congestive character—hence I discard, in their treatment, blood-letting, nauseants and astringents.

"Epistaxis is a very usual concomitant of ague, and is sometimes very troublesome. Formerly I was in the habit of using cold applications freely, and have seen the blood pour out without remission and to a dangerous extent, when my patient was already pale and almost pulseless, and was cold and chilly. I have used styptics and have plugged the nares anteriorly and posteriorly, and still the blood ran. It was devoid of coagulability—it had no fibrin. I have used nauseants, and still it was not checked. In the treatment of this kind of hemorrhage, the only rational and safe practice is to remove the congestion and to equalize the circulation. This is to be accomplished by a liberal use of tonics and stimulants, and the application of external warmth. In no instance have I failed to arrest the hemorrhage promptly, when I have given from five to ten grains quinine, and repeated as required, together with stimulants and the application of external warmth. Cold and astringents and styptics, and nauseants are absolutely hurtful. This treatment applies to every mucous hemorrhage, as well to epistaxis as to any other."—*Extract from Article by E. Read, M. D.—Cincinnati Lancet and Observer*.

"*On the Aphthous condition of the Mucous Membrane of the Mouth in connexion with the Growth of Fungi*. By Dr. A. Vogel, of Munich.*—This disease, the stomatitis pseudo-membranacea, or aphthophyta, is described by the author, as far as the microscope is concerned, and as regards the white patches of the mouth, as presenting, firstly, masses of granular material; secondly, pavement epithelium; and thirdly, a fungus in various stages of development (the *oidium albicans* of Robin.) The various stages of progress are minutely described by the author. We have, in the first place, the natural color of the interior of the mouth changed to a diffused dark red, the edges of the gums being less colored. This is the case especially with the tongue, whose papillæ are very prominent. The temperature becomes raised, and the lining of the mouth becomes tender to the touch, rendering sucking and swallowing painful. The secretion of the mouth is noticed as losing its lubricity, becoming sticky, and assuming an acid reaction. The author proceeds to dilate upon the natural peculiarities of the fluids of the mouth in connexion with the chemical alterations, alluding to the special distinction to be made between the properties of the salivary and the mucous secretions. If a portion of the sticky reddened mucous membrane be examined by the microscope, there is seen, along with epithelium, a number of ovate sharply-contoured bodies, cemented together. These are to be recognized as spores of a fungus, the growth of the latter being obviously prepared by the irri-

* Henle und Pfeuffer's *Zeitschrift für rationalen Medicin*, Band viii, Heft ii, p. 317.

tation of the mucous membrane by chemically altered glandular secretions. The white spots in the mouth then appear to coalesce, and often cover the whole mucous membrane with white scurf, which becomes yellow and brown by exposure to the air and admixture of blood, and may eventually be removed with ease, without pain or loss of blood. The spores, thallus-threads, and epithelium are seen under the microscope to be all surrounded by a finely-granular mass. The free surface of the aphthous membrane contains a large number of spores, less thallus-threads, and much epithelium; whilst on the surface next to the mucous membrane there is no epithelium, but a thick tissue of thallus-threads, and but few spores. On placing a portion in concentrated potash solution for twenty-four hours, the epithelium first disappears, and the white granular mass becomes more transparent and homogeneous, but the thallus-threads undergo no change. In places, a yellow color is seen to be given to the mass, owing to slight admixture of blood.

“As regards the fungus, there appears to be two kinds. The *first*, a broader form, with many transverse marks of the form of yeast-threads; and a *second*, narrower, and free from transverse marks, less sharply contoured, and chiefly granulated. This form appears always to be found, whereas the first one is not. It was curious to find that a portion of an apple containing moisture, and under a tolerably high temperature, if kept under a glass case for from four to five days, showed no fungus growth upon it, whilst a similar piece, under like circumstances, became covered by fungus, if a portion of the aphthous membrane was placed upon it. The author alludes to the views of Gubler and others,* that the first white points correspond to mucous glands, and that the fungus grows out of them. He does not seem to think it proven that the glands are the *habitat* of the fungus sooner than the other parts of the mucous membrane. He himself theorizes as follows:—‘He supposes that the first thallus-threads grow between the upper epithelial layers, penetrate over all as the roots of a tree, and finally enclose the entire epithelial layer in a thick felty texture. Having come in contact with the mucous membrane itself, it irritates it to more secretion, or increases the irritation set up by the acid secretion of the oral cavity, and thus a thick layer of granular exudation is formed, which is occupied by the thallus-threads. Fatty matter also can be extracted by ether from the aphthous product, often in considerable quantities, as is seen under the microscope. According to Reubold,† the fungus only affects the pavement form of epithelium, and not the cylindrical or the ciliated form; so that no independent observer mentions it as extending to the stomach and intestine. The disease is often complicated with a dangerous catarrh of the bowels; children have cholera-like symptoms, collapse, sinking of the fontanelles and eye-balls, &c. The author, in determining a rational method of treatment, found, by aid of the microscope, that new projections from the fungus-threads, after some days, are formed, if a portion of the aphthous membrane be placed in pure water, or in any solution of a salt not having alkaline reaction—as the chlorate of potash, &c. This

* Note sur le Muguet; Gazette Medicale de Paris, No. 26.

† Lehre vom Soor: Virchow's Archiv, Band vii. p. 1. 1854.

also was especially the case if sugar and water was used. But in dilute alkaline solutions, as borax, phosphate of soda—as also in solutions of metallic salts—no new fungus formations take place. On the addition of strong alkalies, the fungus almost disappears. Thus in treatment the end to be aimed at would appear to be the neutralization of the fluid of the mouth, and hence the use of borax solution; but he objects strongly to the ordinary mixture of honey or syrup with the borax. Hence, also, the use of fresh milk, from its tendency to change into casein and sugar, is not good as food.’”—*Brit. & For. Med. & Chi. Rev.*

“*On a Case of Fistulous Opening in the Lower Jaw, accompanied with twelve Abscesses, cured by the removal of Diseased Stumps.* By SAMUEL A. PARKER, Esq., surgeon dentist to the Birmingham Dental Dispensary.—Thomas —, aged twenty-three, was sent to me for the purpose of examining a fistulous opening in the lower part of the cheek, which had discharged for seven years. The history of the case was as follows:—

“In the early part of November, 1850, the crown of the first right lower molar was broken off in attempting to remove the tooth, and the fangs were allowed to remain in the sockets. Considerable pain was experienced for several days, which ultimately led to the formation of an abscess, which broke externally. Six months had scarcely elapsed, when several other abscesses made their appearance in various parts of the neck, numbering in all thirteen. Several attempts had been made to remove the fangs of the tooth broken, but without success; his health began to suffer, and he became very weak from the continual discharge. The first time I saw him was on the 23d day of November, 1857, when, with a pair of ordinary stump forceps, I removed both the stumps, which were much necrosed.

“December 6th.—Has had no more discharge externally, but a little comes through the opening in the gum.

“20th.—The discharge has entirely ceased, the original opening in the cheek gradually closing up, and the marks upon the neck from the other abscesses wearing away.

“January 3d, 1858.—By this time a perfect cure had been effected.

“Remarks.—The case just quoted presents two very remarkable features: first, the unusual number of thirteen abscesses, arising from a diseased condition of two molar stumps; and, secondly, the great length of time the openings continued discharging. Cases are on record in which the disease had existed for two or three years, but this is the only one I am acquainted with, where it had extended over a period of seven years. The patient informed me that the opening in immediate connection with the diseased fangs, had never ceased discharging, more or less, since the first day it broke out. The other abscesses had ceased to discharge about eighteen months previous to my seeing him. Various remedies had been resorted to, which, so long as the stump remained, failed to produce any beneficial results. Several cases of fistulous openings in the cheek have come under my observation, all of which were permanently cured, upon the removal of the exciting cause—viz., a diseased condition of teeth.”—*London Lancet.*

Polypoid Tumour.—"John Bell, in his admirable essay on 'Nasal Polypi,' beautifully describes the passage of polypi from the nostril into the antrum, but never alludes to the converse. And Syme is still more explicit. He says (*The Lancet*, vol. i., 1855,) that polypoid growths in the antrum are always intruders from the nasal cavity, and never developed in the antrum itself."—*Ibid.*

Movable Tumor of the Cheek.—"Six years ago, a small lump began to grow in the left cheek of an elderly man, which increased slowly till it had attained to the size of a pullet's egg. It was quite hard, freely movable in every direction, and seemed to be almost beneath the skin; but an examination showed it contiguous to the mucous membrane of the mouth, from which it may have originally been an offshoot. Mr. Erichsen removed it through the mouth, and carefully dissected out a cyst, which contained solid contents, of an atheromatous character, the soft and pultaceous nature of which had entirely disappeared. At first sight, when the man entered the theatre, he looked as if suffering from a tumor of the antrum. He has gone on quite well.

"A microscopical examination, by Dr. Harley, showed it to possess the elements of cancer, although not really cancerous, from the fact of its possessing a distinct capsule."—*Ibid.*

Tumor of the Tonsil.—"I saw an uncommon operation a few weeks back at the London Hospital, by Mr. Curling, upon an elderly man who had a large tumor growing from his right tonsil, extending into the pharynx and impeding deglutition and respiration. The glands on both sides of his neck were much enlarged, which raised a suspicion of malignancy, and the man's eyes seemed bursting from their sockets. The base of the tumor was ligatured by means of a tumor tourniquet, and gradually tightened, which produced detachment in forty-eight hours. A careful examination by Dr. Andrew Clark, one of the best microscopists in London, revealed its true nature to be fibrous. The man has got quite well, and left the hospital, the enlargement of the glands having wholly disappeared. In applying the ligature, Mr. Curling found it necessary to extend the fissure of the lip, by an incision through the cheek, to allow greater freedom of manipulation. A tumor of a similar character, I saw Mr. Tatum remove from a lad in St. George's Hospital, on the last day of the year. It extended down the pharynx from the posterior nares, and was attached to the body of the sphenoid bone between the pterygoid processes, and consisted of several lobes. Mr. Tatum found it necessary to remove the whole upper jaw, which was done very expeditiously and cleverly, without the loss of any blood, only one small vessel requiring to be tied. This case like Mr. Curling's has turned out quite well."—*London Correspondence of the Montreal Monthly Journal.*

Glossal Papillary Tumor.—"A small tumor, situated about the middle of the tongue, the size of a marble, was ligatured by Mr. Cutler, at St. George's Hospital, on the 14th instant; it had been coming for some time, and was pretty firm, but not indurated. The patient

was a boy, in other respects quite healthy. The growth was not a *nævus*, nor anything malignant, although it was at first suspected to be the former; but from its appearance, feeling soft like the tongue, not painful, and growing slowly, Mr. Cutler took the view that it was due to hypertrophy of the papillæ of the tongue. We think it most likely to be true hypertrophy of the muscular substance of the tongue itself, a feature which seems to have been the leading characteristic of most of these tumors growing upon the tongues of boys and young men, which have come under our notice at various times. Some of them have been noticed in our 'Mirror,' and we have drawn attention to the peculiar dichotomous arrangement of the new muscular fibres observed in the hypertrophoid muscular growths, which are specially considered by Wedl and other histologists. We think the microscope will confirm the truth of this in the tumor in question."—*Lon. Lancet*.

"*Ranula, Removal by Dissection, after the failure of Incision and the Seton.*—The female in whom this occurred had been treated by the usual mode of incision before she came to Mr. Walton, at St. Mary's. The ranula, seated on the right side of the mouth, was decidedly large, and interfered with mastication and speech. This was the second time the patient had been in the operating theatre. Mr. Walton reminded his class that she was the same individual on whom but a few weeks ago he had applied his favorite plan of cure—namely, the seton, one which, as he had mentioned on that occasion, very frequently succeeded. However, here it was not successful, the threads having ulcerated out, without producing that kind of inflammatory action which was necessary to destroy the secreting surface of the tumor. He should, therefore, proceed to dissect away the entire tumor. The operation was readily done with a pair of tenaculum forceps and a small scalpel. No vessel was tied. A small one, close to the jaw, was rather inclined to continue to ooze; but, as it was difficult to reach, washing out the mouth with cold water, was trusted, and the hemorrhage soon ceased. In some of the after remarks, Mr. Walton alluded to the great ease with which he had accomplished his task, and that the chief care required was to keep the tongue aside, which was well done by his assistant, and to avoid wounding it. The patient left the hospital on the fourteenth day quite well, and with no perceptible alteration in the form of the mouth, the cavity being shallowed somewhat on that side."—*Ibid*.

"*Stomatitis Materna.*—From a paper by Dr. J. W. Hall, of Bainbridge, Ind., in the *Cincinnati Lancet and Observer*, April, we obtain the following ideas on ulcerative inflammation of the mouth in women during the closing months of utero-gestation. It is rarely met with in particular localities, while in others it seems endemic. The affection 'appears to be of an aphthous nature, and associated with a disordered system; as that of anæmia, combined with a scrofulous diathesis, dyspepsia, &c.' We find it attacking the mucous membrane indifferently, and even migratory in its character. It sometimes becomes chronic.

"He mentions a case which we shall transcribe. 'While suckling, he lady was attacked with a sore mouth; she had medical aid, but

was not cured; the ulceration had disappeared from the mouth, and was seated in the bowels, producing a chronic diarrhœa, general emaciation, etc. At this period she came under my care; the diarrhœa was persistent, with tenesmic griping pains, the discharges consisting of the unhealthy secretions of a muco-purulent character, and sometimes tinged with blood, the operations being very frequent and small in quantity. At the same time, she would be attacked with paroxysms of severe pain in the bowels, sometimes extending to the stomach and right side, which were at first irregular in their return, becoming more frequent as the disease advanced, the paroxysms ultimately recurring daily, the tongue red and smooth at the tip and edges, sometimes its whole surface presenting a red fiery appearance; the appetite voracious; pulse but little accelerated.

“In the treatment of this case, the first indication was to arrest the diarrhœa, and restore the bowels to a healthy condition; to arrest the diarrhœa, I relied on the mineral and vegetable astringents with opium.

R—Plumbi acetat. gr. i-ij;
Pulv. opii gr. ss-j.—Ft. pulv.

“Or using pulv. ipecac. et opii, gr. v., for the pulv. opii; or tannin and opium, and given according to the frequency of the discharges. Enemata of starch and laudanum were also used.’ In order to remove the local disease from the bowels, he gave an emulsion of ol. terebinth. and copaiba, with a few drops of tr. opii.

“Tonics, etc., were used to improve the general state of the system, and she gradually improved. Sometimes he found, even after a seemingly perfect restoration to health, a return of the disease. In order to expedite the cure, weaning of the child should be performed immediately.”—*Med. and Surg. Reporter*.

Sympathetic Nervous Action.—A writer in the *Peninsular Journal of Medicine*, on Reflex Secretory Action, alludes as follows to the disturbances produced in the system by diseased teeth:—“Every Dentist knows that a bad tooth will cause various symptoms in distant parts, which suddenly ceases by the extraction of the tooth, and every farrier knows that what is sometimes called a ‘wolf-tooth’ in a horse, produces inflammation in the eyes of the animal, and that the extraction of the tooth will cure the inflammation of the eyes. Certainly facts of this nature are universally known and recognized.”

“On Excision of the Trunk of the Second Branch of the Fifth Pair in Facial Neuralgia. By Professor CARNOCHAN. (*American Journal of Medical Science*, vol. xxxv. pp. 134—143.)

“In this paper is described a new operation devised by Professor Carnochan, for cases of severe facial neuralgia, essentially consisting in vascular congestion or inflammation of the trunk of the second branch of the fifth pair—a condition that may have its origin in various causes. At all events, such was the pathological state of the portion of the nerve removed in the three cases in which he has performed this operation, and for the relief of which mere division of the nerve as it leaves the infra-orbital foramen would be of no avail. ‘I

believe,' he says, 'that, in such aggravated cases of neuralgia, the key of the operation is *the removal of the ganglion of Meckel, or its insulation from the encephalon*. Where even a large portion of the trunk of the second branch of the fifth pair has been simply exsected from the infra-orbital canal, the ganglion of Meckel continues to provide, to a great extent, the nervous ramifications which will still maintain and keep up the diversified neuralgic pains. Besides, the ganglion, being composed of *gray matter*, must play an important part as a generator of nervous power, of which, like a galvanic battery, it affords a constant supply; while the branches of the ganglion, under the influence of the diseased trunk, serve as conductors of the accumulated morbid nervous sensibility.'

"The first case in which these views were put into practice occurred in the person of a French physician, aged sixty-seven, incapacitated by this neuralgia from following his profession. Commencing in 1851, it recurred at intervals, with gradually increasing severity, until 1856, from which time it became absolutely excruciating, and almost continual. Every anti-neuralgic remedy had been resorted to in vain, when, in October, 1856, he applied to the author, wearied of his life, and willing to submit to any operation. The rationale of this formidable one having been explained to him, he desired its immediate performance. It was therefore executed on the 16th October. We need not describe the procedure in detail, but may merely state that it consisted in trephining the anterior wall of the antrum immediately below the infra-orbital foramen, and following the nerve with the chisel and forceps along the floor of the orbit into the sphenomaxillary fossa, and dividing its trunk close to the *foramen rotundum*. 'This severe and trying operation was perfectly justified by the fearful nature of the disease for which it was projected. It is one of those operations which could not be supported by the patient without the influence of chloroform. The handling of so large a nervous trunk with the forceps, and the necessary contact with hard instruments, while separating it from its surrounding connexions, would, I suppose, be beyond human endurance, without the aid of the anæsthetic influence of chloroform or ether. For the rest, the effects of the cicatrices upon the countenance can scarcely be called disfiguring, and the patient speedily recovers without suffering from much constitutional disturbance. * * * The trunk of the nerve in this case was much larger than natural in nearly its whole extent. The neurilemma was very vascular, and the nervous tissue proper was also engorged and red. The trunk, after its removal, was so red as to have somewhat the appearance of muscular tissue. The length of the nerve removed was a little more than an inch and three-quarters.' The recovery was rapid and the relief complete.

"The subject of the second case was an Italian, aged fifty-four, who for many years had been the victim of severe neuralgia, all means having been tried, and among others division of the nerve, as it left the infra-orbital foramen, on three or four occasions, with only temporary benefit, and not always that. The above operation was performed, a similar condition of the nerve (which was removed to the extent of two inches, the ganglion of Meckel hanging to it) observed, and the

same relief followed. A woman, aged fifty-five, was the third patient, she having been the subject of dreadful suffering at intervals since 1851, and having tried all remedies, including division of the nerve, with only partial benefit. There was considerable hemorrhage in this case during the operation, from the spheno-maxillary fossa, which was stopped by the employment of compressed sponge. Two inches of the vascular and enlarged nerve were removed, and the relief was complete.

"In all these cases the relief from the most excruciating suffering was prompt and complete; but in reference to the permanence of the effect, it is of importance to bear the dates of the operations in mind. The first had been performed fourteen months when it was reported; the report of the second, performed October 10, 1857, comes down to December 8; and that of the third, performed November 5, 1857, to December 3. Any conclusion drawn from the two last cases, or even from the first, would be premature.—*Brit. & For. Med. & Chi. Rev.*

"*Paralysis of the Facial Nerve several Times Artificially Produced in a Case of Injury to the Tympanum.*—A very favorable report was made to the Academy of Medicine of Paris by Messrs. Larrey, Guérard and Roche, upon a paper with the above title, by M. Deleau. The case refers to a young lady whose tympanum was perforated, and who for several years had suffered from suppuration from the ear, and deafness on the side affected. Warts were growing on the meatus externus, and a transitory paralysis of the right side of the face had occurred. In the course of the treatment, M. Deleau brought to view the chorda tympani; it was red and swollen, and he was struck with the idea of touching it with a solution of nitrate of silver. Paralysis of the right side of the face occurred, as it had happened once before when a portion of the injection penetrated the tympanum. Both attacks were controlled by cupping behind the ear. The experiment of touching the chorda was repeated soon afterwards, and pain and paralysis again occurred as before. The author strives in his paper to establish the following propositions:—

"1. Paralysis in the muscles of either cheek arises almost always from a lesion of the tympanum, and especially from the pressure upon or strangulation of the facial nerve whilst passing through the aqueductus fallopianus.

"2. The exaggerated auditory sensations which sometimes accompany this paralysis, is a symptom of internal otitis.

"3. In most cases of paralysis of the face, we should treat energetically the affection of the ear which has been the cause of it, and not pay attention to the paralysis itself, which is but a symptom.

"4. Finally, the so-called essential paralysis of the muscles of the face, as well as the same paralysis depending on cerebral derangement, are much rarer than has generally been supposed."—*London Lancet.*

"*Why is the Countenance an Index to the Character?*—SIR:—It is an interesting subject of inquiry, what connexion there is between the emotions of the mind and the corresponding and permanent modifica-

tion of the features as long as, and even after, those emotions exist. Do the emotions bring into play certain corresponding muscles, which by use become enlarged, and become thus an index of the emotions that have been permitted? And do these muscles thus brought into play minister to the formation of gristle or bone corresponding to the emotions? And if a vicious man or woman becomes a virtuous one, do the same laws which had previously produced a demoniac countenance now form a 'face, as it had been an angel's?'

Ibid.]

"Obedient servant,

H. A. H."

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 "The Face an Index to the Mind.—SIR :—The indications furnished by the countenance are so important to the practical medical man, that I am tempted to answer your correspondent who introduces the subject.

"The countenance indicates not only the character, but many other things. To attempt to pick out one indication only, and read that, is but courting error; *all* the indications must be taken into account if we wish to understand any of them. Thus, the face indicates also the habits of the person and his circumstances, such as ease or toil, care or the freedom from it, successfulness or the reverse, the custom of submission or command, watchfulness, debauchery, and a hundred outward physical conditions. It also shows the strength or weakness of his constitution, past illness if it have been frequent or long-continued, habitual bodily comfort or discomfort, constitutional peculiarities or infirmities, nervousness of temperament, and such like. These indications will be complicated by the effects of loss of teeth, conformation of the bones and features, plumpness or thinness, and even by variations in the hair and beard, as well as by transitory effects, from the passions, present or recently past, from comfort or fatigue, pain, irritability, excitement, languor, heat, cold, &c. It is thus impossible to separate the study of the facial indications of character from the other indications with which they are mixed up.

"The indications of *character* are in particular so intertwined with those of *habits*, *circumstances*, and *customary sensations*, that they cannot always be distinguished one from the other, and they certainly arise from the same physical cause. That cause I consider to be the frequently-repeated actions of the muscles of the face, which, occasioning frequently-repeated pressure in some parts with freedom from it in others, come in time to be followed by a little absorption of the areolar tissue at the parts pressed upon, with an absence of such absorption where the pressure is not. After some years of such an imperceptible process, a good deal is recorded in the countenance. I believe this process of minute partial absorption from frequently-repeated pressure of the muscles of the face to be the chief source of the facial indications alluded to. Certain muscles also become habitually contracted, and heighten the effect. The muscles themselves may become a little enlarged, but more often from some habit of grimace than from their natural and legitimate action.

"As proof that local absorption of tissue is the chief cause, we may cite its opposite—viz : local deposition. Thus, scrofulous deposit beneath the integuments of the face will give quite a changed expres-

sion. So, again, the subcutaneous deposits of incipient leprosy will impart to the countenance an expression quite foreign to its natural character.

"From this view of the matter, it will be understood how the facial indications of character, &c., as they take time to form, must take also much time to change; indeed, it may be questioned whether some of them are not indelible. In this regard they are a true reflection of the habits of the mind, which grow slowly up with time, and alter with difficulty, if ever.

"This study of the facial indications is worthy of as much attention as our avocations permit us to bestow on it, as tending to a fuller understanding of the physiognomy of disease.

I am, sir, your obedient servant,

WM. E. C. NOURSE, F. R. C. S."

Eltham, April, 1858.

[*Ibid.*

Re-production of Parts.—The following occurs in an article in the *Pacific Medical and Surgical Journal*, by Dr. E. S. Cooper, on Exsection of Bones, Reproduction of Parts, &c.

"All agree that a loss of a portion of the cartilaginous plate that connects the false ribs to the sternum, is supplied by bone. Is it strange, then, that bone should be re-produced in healthy persons whenever and wherever lost? It does not require the periosteum to be saved, in order to secure re-production of bone. Those practitioners who make transverse incisions, and cut off tendons, under the specious plea of saving the periosteum, show an uncommon degree of ignorance."

Fluid for the Preservation of Nerves, &c.—"In connection with microscopical investigation, it may be well here to bring to notice a fluid which Dr. Lambe speaks most highly of, for the preservation of nerves, ganglia, the retina, cancer cells, and delicate protien-holding tissues. It is used by Paccini, and is of the following composition: Corrosive sublimate, 1 part; pure chloride of sodium, 2 parts; glycerine, 13 parts; distilled water, 103 parts. This is to be left to stand for two months, then mixed with distilled water in proportion of one to three parts of water, and then filtered. By means of this fluid, as the red corpuscles are precipitated and hardened by it, retaining their form, the corpuscles may be counted."—*Brit. and For. Med. and Chi. Rev.*

On Mercury.—As a Study of Blood Medicines. By F. W. Headland, M. D., B. A., F. L. S.

"The *physiological action*—i. e. the inevitable operation of mercury on all persons, healthy or diseased—may be stated in three theorems.

"1. It is absorbed, and passes into the blood.

"2. It disintegrates, or decomposes the blood and wastes the body.

"3. It is ultimately excreted, and passes out by some glands more than by others, increasing secretion, both healthy and morbid.

"1. *It is absorbed and passes into the blood.* Without insisting on the argument that a medicine which produces such a manifest effect on

the fluids, and on remote parts of the system, must of necessity be absorbed before it can act, I may be content with the statement that mercury has been discovered in the blood of persons to whom it had been administered, by Wöhler, Tiedemann, and other chemists. So intimately does it become united with organic matter, that it is necessary to submit the blood to the process of destructive distillation before the metal can be recognized by the proper chemical tests. Not only has mercury thus been discovered in blood, but it has been detected while making its exit from the system, in various excretions. It has been found in the urine, the bile, the sweat, the saliva, the milk, and in pus on the surface of ulcers. It has been discovered in the solids after death, as in the brain, the bones, in the cellular tissue, in serous membranes, and the parts about joints, and in the lungs and liver. Mercury, wherever it is applied, if applied in the proper form and manner, is equally capable of reaching these distant parts and secretions. It can only reach them by becoming first absorbed into the blood, and passing through the system. Mercury, therefore, is absorbed.

“In order to be absorbed, it must be capable of permeating the absorbent animal membranes, whether of the stomach or intestine, of the skin or the pulmonary surface: that is to say, it must be in such a state as to be *soluble* in the fluids of those surfaces. * * * I think it may be most positively affirmed, from what we know of the function of absorption, that no substance whatever can pass through a living (and entire) animal membrane, without being in a state of solution, and capable of mixing with the fluids on the other side.

“How, then, is this state of solution obtained in the three forms of mercury in use as medicines? The problem, in the case of two, at least, is a difficult one; but I may perhaps be able to throw some light upon it. Metallic mercury is not capable of solution in any of the animal fluids. To whatever part or surface of the body we present it, it cannot be dissolved; it cannot, therefore, undergo absorption. It is inert. But it is capable of undergoing change, and after that change it may affect the animal system. It was long ago shown by Boerhaave, that mercury, when agitated for some time in a flask in contact with air, became coated with a blackish crust. This is on account of an oxidation which the surface of the metal has undergone. The crust consists partly of *protoxide of mercury*. Moreover, mercury, like water and other liquids, though to a less extent proportioned to its great density and high boiling point, gives off some vapor at the ordinary temperature of the atmosphere. Dr. Wright has shown that this vapor undergoes partial oxidation in the air. It is by the agency of this oxide that artizans, exposed to the vapor of mercury, become liable to various diseases. * * * The *protoxide of mercury* is doubtless the active part in each of these preparations. Unlike metallic mercury, it is soluble in many of the animal fluids. The acids of the gastric juice, and the lactic and the butyric acids of the secretion of the skin are capable of dissolving it. So also are the secretions of bile, saliva and mucus, though to a less extent.”—*Lancet*.

Paleontology.—“Dr. Leidy directed the attention of the members to some fossils on the table, being part of the collection obtained by Dr. F. V. Hayden, in the valley of the Niobrara river, Nebraska. One

of the specimens was the lower jaw of a new species of Mastodon. It belonged to an old individual, as the last molar tooth occupies its functional position and is considerably worn. The jaw indicates a smaller animal than the common Mastodon (*M. Ohioticus*.) The tooth resembles the corresponding one of *M. sivalensis*, or of *M. angustidens*, much more nearly than that of the common Mastodon. The crown has a much greater antero-posterior diameter in relation to its transverse diameter, than in the latter, and it has six transverse rows of tubercles, together with a feeble tarsus. The tubercles are crowded instead of being separated by wide angular valleys as in the common Mastodon. The tooth was compared with that from an unknown locality, characterized by Dr. Hays under the name of *M. Chapmani*; but this more nearly resembles the South American species *M. Humboldti*. In advance of the tooth, there are no traces of an alveolus for the preceding tooth, but a sharp ridge proceeds from the last molar to the anterior extremity of the jaw. Dr. Leidy observed he had never seen the jaw of the common Mastodon in the same condition, as the oldest individuals always presented the fifth alveolus filled up, and not completely obliterated. The species he named *Mastodon mirificus*.

"Dr. Leidy next exhibited part of an upper molar tooth of an Elephant from the Niobrara; which he suspected to be a species distinct from those previously indicated, though it does not present sufficient characters to establish the opinion. It is the broadest tooth he had ever seen, being almost five inches, and it has fewer plates of enamel than in any variety of teeth of *Elephas Americanus* that had come under his inspection. The species he proposed to distinguish by the name *Elephas imperator*.

"Dr. Hays called attention to the fact that the tooth of the new Mastodon had protruded more obliquely forward and upward than in the common species, indicating a nearer alliance to the elephant.

"Dr. Leidy thought Dr. Hays quite correct, and that the last molar in protruding forward and upward had gradually displaced two preceding teeth, whose position it now occupied. He then described the mode of development and succession of the teeth in the elephant; and he showed, as observed by Dr. Hays in the new Mastodon, that we have a closer approximation to the same process, than in the common species."—*March 2d, 1858.*

"Dr. Leidy called the attention of the members to some fossil remains on the table, just received from Dr. Hayden. They are part of the Niobrara collection, and apparently indicate two additional species of the ancient camel (*Procamelus*.) One of the species is founded on the greater portion of one side of the lower jaw containing most of the molar teeth. Six molars form a closed row, of which the back four have about the same size and form as in the recent camel. The second premolar is like the third one, and the first of the closed series has a laterally compressed conical crown with trenchant borders. The caniniform premolar has almost the same size, form and relative position as in the recent camel; and in the fossil, in a corresponding position, there is an equally large socket, as in the latter, for a true canine. The jaw is shorter but deeper than in the camel, and it appears to indicate that the species to which it belongs was about the size of the latter

animal. The length of position occupied by the closed row of six molars is six and a quarter inches; the depth of the jaw below the middle of the last molar is two and a half inches, and below the first molar one and three-quarter inches. For this species the name of *Procamelus robustus* is proposed.

“The second additional species of this genus is indicated by several small fragments of an upper jaw with molar teeth, of an animal about the size of the Lama. The three premolars of the closed row occupy a position of fifteen lines in extent. For the species the name of *Procamelus gracilis* is proposed.

“Dr. Leidy added that he took the present opportunity to point out the admirable quality of bees-wax as a means of mending fractured fossils, and of increasing their strength when friable. If a fossil bone or shell have become quite brittle by the loss of its animal matter, and is dipped in melted wax and allowed to cool, it becomes nearly as hard as the specimen was in its original condition. For mending, it had the advantage over most cements that no time was lost in allowing certain parts to dry, which had been united, before others could be added.”—*April 6th, 1848.—Extracts from Proceedings of the Academy of Natural Sciences of Philadelphia.*

New Preparation of Superphosphate of Iron and Lime.—“Dr. Routh exhibited to the Medical Society of London (Feb. 20, 1858,) this new preparation. It was prepared by dissolving phosphate of iron and phosphate of lime, in equal proportions, in hot metaphosphoric acid, and adding sugar to the solution to make a syrup. Some years ago he had recommended the syrup of the superphosphate of iron (elsewhere known as the biphosphate of iron) as a remedy for weakly children, and those weak adults with mental diseases. Its uses as such had been since amply proved. He now recommended this as an excellent remedy in rickets and weak children with deficient osseous development. It was very pleasant to take, and did not blacken the stools. It was prepared by Mr. Greenish, of New street, Dorset square. Each ounce of the syrup contained five grains of iron and five of phosphate of lime.”—*Lancet.—Med. News.*

Diagnosis of Throat Hæmoptysis.—“The following notes on the characteristics of throat hæmoptysis as distinct from that attending pulmonary disease, are the memoranda of a conversation on the subject in the out-patients’ room of the City Hospital for Chest Diseases. They may possibly interest some of our readers. When blood comes from the throat, *a*, it is always in very small quantity—*b*, it is never mixed with small air-bells—*c*, it generally occurs as streaks in mucus—*d*, almost always follows a fit of coughing—*e*, is of most frequent occurrence early in the morning—*f*, the patient often complains of having a dry throat on waking. When the hæmoptysis is spontaneous, or when it amounts in quantity to anything near a teaspoonful, it is almost always pulmonary.”—*Medical Times and Gazette, Feb. 6.—Med. News.*

Baron Neimans.—"This distinguished *savant*, who was on his way to follow up the traces of Dr. Vogel, in Africa, died on the 15th of March, of lock-jaw, occasioned by an unsuccessful dental operation."—*London Lancet*.

"*A Dentist's Fee.*—The Vienna correspondent of the *Times* writes thus:—"On the day after that on which the Ameer quitted Vienna a dentist called on me, and stated that he had been 'done' by the foreigner, who had gone away without paying him for a front tooth which he had put in for him. In the course of conversation, the dentist stated that he had asked £20 for the job, and he was much hurt on being told that in my opinion he was rightly served, inasmuch as he had been done whilst attempting to do."—*London Lancet*.

The Boston Transcript says, the following by Oliver W. Holmes is the finest simile ever written: "The mind of a bigot is like the pupil of the eye; the more light you throw upon it, the more it contracts."—*Penin. Jour. Med.*

Cancer of Cheek.—"Obed. O——, æt. 77, consulted me in September, 1854, for a swelling of his right cheek, that had existed about four months before I saw him. The right malar region was considerably swollen, felt doughy, was dingy red and glossy; it was very tender, and he experienced remitting pains in the part, of a pricking and shooting character. He had five decayed teeth in front of the upper jaw, and had lost all his other teeth long before. The vision of the right eye was unimpaired; in his right nostril was an ordinary mucous polypus, which had existed for some years; this I removed. He knew not how to account for his malady; none of his relations ever had cancer, but there appeared to be a tuberculous tendency in the family. He had lost flesh; his appetite had forsaken him; his complexion was dull and earthy.

"The further progress of the case may be told in a few words. The tumor had increased, but never reached any considerable size, nor gave him much pain. The right eye was attacked by a chronic inflammation, and was slightly protruded; and he at last became nearly blind of this eye. He lost his sense of taste; 'every thing tasted alike to him.' The nostril bled occasionally, often to a degree sufficient to require medical attention. His sense of smell, too, became impaired; but it was in his general health that the most marked changes occurred. He wasted to a 'living skeleton,' sinking with it to a degree of debility not often witnessed. He died the latter end of February, 1855, about eight months from the first commencement of his disease."—Mr. J. Z. LAURENCE.—*Half-Yearly Abstract*.

Medical and Surgical Reporter.—This journal, formerly published in Burlington, N. J., is now published by J. W. Bradley, 48 North Fourth street, Philadelphia, under the editorship of S. W. Butler, M. D., and W. B. Atkinson, M. D. It is ably conducted, and we wish it prosperity under the new arrangement.

Explosions in Moulding.—"We notice in one of our cotemporaries that while George Keyser was recently pouring some melted composition metal into journal boxes, at North Adams, Mass., an explosion occurred, causing the molten metal to fly out in all directions, and some of it into his face, slightly injuring his eyes. The accident is attributed to some moisture having gathered in the cavity which was to receive the molten metal. This, we think, was the true cause of the explosion, as we have known like accidents occurring from similar causes; and we notice this one to give a word of advice.

"Before metal is run into a mould it should be clearly ascertained that there is no water in it, because a very minute quantity is liable to cause an explosion when the molten metal comes in contact with it. In moulding such simple things as rifle bullets, several persons have had their eyes permanently injured by neglecting this precaution. In the act of moulding bullets it is not unusual to dip the mould into cold water, to cool it, and if not dried when the metal is again poured in, an explosion will certainly occur, and the lead, in all likelihood, will be thrown into the face of the moulder. 'A word to the wise is sufficient.'"—*Scientific American*.

The Dental Colleges.—On cover will be found advertisements of the Baltimore and Pennsylvania Dental Colleges, to which we would direct the attention of those especially who are preparing for the practice of dentistry.

In consequence of the decease of the much-lamented Prof. Handy, a change has occurred in the Faculty of the first named school. Prof. Piggot—who is well known to the profession—filling the vacated chair. A change having occurred also in the latter school, a few words in reference to the new incumbent will not be out of place here.

Prof. Suesserott is a graduate of the Jefferson Medical College of Philadelphia, session 1850-51. Since that time he has been engaged in the practice of medicine and dentistry in Chambersburg, Pa. From our long acquaintance with him, we have reason to believe that his excellent medical training, and the practice which he has had in medicine and dentistry, will enable him to do full justice to the chair which he occupies in this institution.

Prof. Pierce, who will be recognized as one of our contributors, attended the first two courses of the Philadelphia College of Dental Surgery, and graduated session 1853-54. Since then he has devoted himself exclusively to the practice of dentistry in this city. He enjoys a fair practice and is a first class operator. We have seen work from his hands which we believe cannot be excelled. We therefore regard his connection with the school as an acquisition to it. J. R. M'C.